



HENRY H. MUDD, M. D.,
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ITEMS OF INTEREST.

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Shorts from the Profession.

THE CHICAGO DENTAL SOCIETY—TWENTY-FIFTH ANNIVERSARY.

REPORTED FOR ITEMS OF INTEREST.

The Twenty-fifth Anniversary of the Chicago Dental Society was celebrated by one of the most successful meetings ever held by any society, whether local, state, or national. The best professional talent in the United States had been engaged, as essayists and clinical operators, and the admirable program was carried out to the letter with scarcely a break.

Promptly on time the meeting was called to order by the President, *Dr. J. A. Swasey*, and opened with prayer by the Rev. G. C. Lorimer, D. D. After a very brief address of welcome from the President, *Dr. A. H. Thompson*, Topeka, Kansas, read a short paper describing his method of grinding pieces of the gum-colored portion of porcelain teeth as fillings for cavities on the labial aspect of the necks of the anterior teeth, when the gum has receded, and where the usual gold fillings are most unsightly.

The discussion of this paper was extended to cover porcelain inlays in general. No one present had tried the method specially advocated by Dr. Thompson, viz., gum colored porcelain fillings.

Dr. C. Thomas, Des Moines, Iowa, opened the discussion. Dr. Thomas makes his own inlay to suit the case in hand, burnishing into the cavity a platinum ribbon, which serves as a matrix in which he bakes tooth body. By this method he not only uses inlays as described by Dr. Thompson, Dr. W. Stover How and others, but he also restores corners of incisors, builds up crowns of molars, etc., baking pins in the fillings to secure their retention.

Dr. Dorance, Ann Arbor, Michigan, does not think this method of universal application, but preferable to metal wherever it can be made available, because of being a non-conductor, and of close resemblance to the tooth. He considers it well worthy the efforts of all practitioners.

Dr. Peterson, Iowa, said that he had come to this meeting espe-

cially to learn the best method of inserting porcelain fillings. He thought Dr. Thompson's method more generally available than that of Dr. Thomas.

Dr. Fernandez, Chicago, uses English tips, which are made of good body and have pins.

To secure a perfect adaptation, Dr. Sudduth suggests, after a proximate fit has been made, putting emery in the cavity, and, holding the inlay in a mandril, grinding out the cavity, as a glass stopper is ground to a bottle.

Dr. Green, New Albany, suggests heating the inlay, which makes the cement set much harder.

Dr. Charles Pruyn read a very long paper, giving the history and results of a series of experiments on dogs with cocaine. Dr. Pruyn has studied the subject exhaustively, even to death. His experiments show especially that morphine is a perfect antidote to cocaine; to receive its effects, it must be injected a half hour preceding the cocaine injection, and not in combination. Dr. Pruyn also gave the history of a large number of cases in practice, and his deductions as to the toxic qualities and the symptoms; the precautions to be observed; the contra-indications, and the antidotes. He concludes that cocaine should never be used in case of pregnancy, in the presence of any disorder of heart, lungs or kidneys. Obesity, anemia, hysteria are also contra-indications.

Dr. Wm. H. Atkinson, in the discussion of this paper, said that the experiments show lack of uniformity of results; cocaine is yet in the hands of experimenters, and great caution should be observed in its administration.

Dr. Wm. Conrad says, that tho he has used it frequently, with no alarming symptoms thus far, the more he hears about it, the more careful he feels it necessary to be, tho we cannot do without it.

Dr. T. E. Weeks, Minneapolis, read a paper on Obtunding Sensitive Dentine, or

SENSITIVENESS AND ITS CONTROL.

Describing the structure of the tooth, the function of the pulp, and the transmission of sensation through the dentinal fibrils, through pressure on the water, which is a constituent of its fibril and which also surrounds it in the tubuli, he concludes that sensitiveness of dentine is best controlled by means of dehydration. Much can also be accomplished through certain phases of "mind-cure," as in gaining the confidence of the patient, making him feel that you know what to do and how to do it. To do this, a thorough knowledge of tooth construction is necessary. Otherwise, you are liable to pass the boundary line and find you are playing with fire.

Dr. L. Custer, Dayton, Ohio, in opening the discussion, said he fully agreed with Dr. Weeks as to the power of the imagination. A painful sensation is a mental operation, an image formed subjectively. Through cultivation of the imagination such images are much more vivid. The sight of certain instruments, the smell of certain medicines, hearing certain noises recalls sufferings with which they have been associated, and arouses dread of a repetition. There is also a great deal in personal magnetism. Sensitive dentine is controlled through change of structure, as in the use of coagulators, through reduction of temperature or dehydration, and through withdrawal of nutrition, or by combinations of these methods. Much can also be done by the intelligent use of proper instruments.

The subject was further discussed by Drs. Atkinson, Thompson, Harlan, A. E. Baldwin, and Prof. Taft. Dr. Taft dwelt on the importance of making a special study of conditions, both local and general, in determining the method of treatment. The thorough drying of the dentine with the aid of alcohol and warm air, then saturating with creosote or oil of cloves with a jet of hot air to facilitate its absorption will frequently relieve sensitiveness entirely.

Dr. J. J. R. Patrick read a paper on the

STUDY OF PREHISTORIC REMAINS IN THEIR RELATION TO DENTISTRY

As the only method of settling the question as to the relation between civilization and caries, as cause and effect.

Buried beneath the soil of the western prairies are the remains of thousands of Indians, which, if properly studied, might add much to our knowledge and perhaps dissipate many theories, now held on insufficient testimony or drawn from the imagination.

In the discussion of this paper, Dr. E. F. Darby, Philadelphia, gave an interesting sketch of his researches among the mummy pits of Egypt, in the charnel house of the convent of St. Catherine, Mount Sinai, and his observations among the Bedouins of Arabia, in search of evidence on this question.

Dr. A. H. Thompson thinks the popular belief in the poorer teeth of civilized races is due to the fact that we preserve the weakest with the greatest care, while among savage nations the weak go to the wall, and their defects were not perpetuated. In reality we live longer, and live better than the savages did.

Dr. Sudduth thought it a shame that the profession should have remained so long satisfied with such superficial views on a subject of so great importance. The question has been discussed without any just basis for argument. We want more data, and more philosophy in using facts.

DR. J. H. MARTINDALE, Minneapolis, read a paper entitled :
CARIES AND NECROSIS, IN THEIR RELATION TO PRACTICAL DENTISTRY.

The distinction between Caries and Necrosis was quite clearly laid down by Dr. Martindale, caries in osseous structure being compared by him to ulcerations in soft tissues; Necrosis to gangrene. The great difficulty of diagnosis in the outset was pointed out, from the similarity of the symptoms to those of periostitis, the pain simulating toothache.

Among the causes leading to caries and necrosis, Dr. Martindale enumerated the exanthematous diseases of childhood, traumatism, syphilis and mercurial poisoning, careless dental operations, etc. His treatment consists in injections of Arom. Sulph. Acid, supplemented by surgical interference in the removal of sequestra, injecting of peroxide of hydrogen, packing the wound with iodoform gauze between sittings, the use of bi-chloride of mercury as an antiseptic, etc. The paper was supplemented by the history of a number of typical cases from Dr. M's case-book.

DR. ATKINSON commended Dr. Martindale's paper in the highest terms. For the sake of those "who care to be right," Dr. Atkinson added the following distinctions: When through the stress of inflammation tissues have been swollen, congested, and melted down till granules of embryonic tissue have separated—that is pus; one step beyond this we get something worse than pus, which will desegregate into the mulberry mass; then we get sanies; with developing virulence, the remnant of the connective tissue is dissolved and we get ichor. Whenever there is bad smell and bluish tinge we have sanies and ichor besides pus. Aromatic sulphuric acid acts through chemical changes in bone tissue, the tribasic phosphate of lime being changed into the bibasic phosphate, which is more crumbly and more easily taken away. It coagulates at the line of demarcation forming a scab which is thrown off, and beneath which are proliferations of granulating tissue. Dr. Atkinson renewed his commendation of the sponge-graft in the reproduction of gum tissue, with the hope that all who heard him would "go and do likewise."

DR. BROPHY regretted the too frequent evident lack of ability to diagnose caries or ulcerations of bone, which often has its origin in alveolar abscess, beginning in the territory at the apices of the root, and caused by exudations from a dead pulp—a disease, not of the tooth but of the territory beyond. Dr. Brophy uses boracic acid gauze, which has all the antiseptic qualities of iodoform without its odor. In the treatment of caries and necrosis the sense of touch may be good, but sight is better. Dr. Brophy therefore exposes to view the diseased tract after

removing all carious bone, and cutting off the ends of the deceased roots, he packs the wound with crystals of boracic acid, which is more constant in action than any other agent. When "red eyes" appear he fits to the wound a plug of softened wax, which is to be shaved down as the wound heals from within till nothing is left.

DR. G. V. BLACK read a paper on

ANTISEPTICS.

Giving the results of a recent series of experiments, telling the antiseptic qualities of a long list of agents, including many of the essential oils, aseptol, hydronaphthal, iodoform, ergenol, eucalyptol terpinol, salacylic acid, and many others. The culture medium used in all these experiments was a peptonized beef-broth, infected with his own saliva, each test tube being kept in the incubating oven five days unless growths of microbes appeared earlier. A growth of microbes appeared in the undissolved powder at the bottom of the tube containing *iodoform* proving this much relied on agent to have absolutely no antiseptic value in itself. The results in this case of the essential oils are very interesting, proving that some which are highly esteemed to have but little value, while others that are but little used are of great value.

In the oils of cageput, copaiba, coriander, eucalyptus, thyme and wintergreen, growths of microorganisms appeared in the emulsion. On the other hand the oils of cassia, cinnamon, cloves, mustard, inhibit growth in the proportions of 1-4000 (cassia), 1-2000 (cinnamon), 1-1200 (cloves), 1-1500 (mustard). Oil of pennyroyal 1-720, oil of peppermint 1-375, oil of sassafras 1-530. Carbolica cid 1-300; the 5 per cent. solution 1-8 to 1-15.

Various combinations have greater value than any of the constituents. Thus Dr. Black's favorite "1-2-3."

Carbolic Acid	1 part
Oil of Cassia	2 "
Oil of Wintergreen	3 "

has a range of antiseptic value greater than carbolic acid alone, without its evil effects. Of the four forms in which antiseptics may be used,—water, the oils, the dry powder, or hypodermic injections,—washings are the least available in dental practice, as the application must be continuous to get the effect of the drug, as a continuous drip of from fifteen to twenty minutes, etc. Solutions in peroxide of hydrogen have a greater value to the dentist than in water. Antiseptic oils remain much longer in contact with the parts affected, and are, therefore, much more effective. In the selection of an agent, regard must be had not only to the antiseptic value, but also to the effect on the tissues by absorption, bearing in mind that the greater the range of value, the greater also the toxic properties.

This is especially true of the dry dressings; their efficacy being due to their solution in the secretions, which with many might be injurious through absorption. Boracic acid stands at the head of the head of the list for dry applications.

Hydronaphthol has less value and is not borne so well by the tissues. The powders are liable to cake, forming a dry arch beneath which septic influences may be at work. For this reason the combination of the oily and the dry dressing is very valuable.

Hypodermic injections of antiseptic agents are used mostly in gangrenous tissues, the stumps of tumors, etc.

This paper was discussed by Drs. E. M. Bailey; Sudduth; A. H. Thompson; H. A. Smith; Harlan; J. H. Wooley; and others. Clinical experience proving the practical value of idoform, notwithstanding all tests to the contrary. The suggestion was offered that chemical changes not yet investigated might take place in the contact with the secretions from wound surfaces. Dr. Sudduth added to the list of antiseptics, silica-fluoride of soda. Dr. Wooley spoke of the great value of heat, as an antiseptic agent.

Tuesday night, *Dr. R. R. Andrews* gave a Lantern Exhibit of photomicrographs enlarged from microscopic slides, including sections of the jaw showing all the stages of tooth development and also of the different tissues of the tooth and its surroundings. Then came a series of views of sections of dentine, in health, and in the various stages of caries. The tubules distended and broken down by the presence of micro-organisms and the organisms *in situ* both in the tubules and in the anastomosing canaliculi, were seen on the screen, proving unmistakably their *presence*, whatever opinion be formed as to their function. Dr. Black laid much stress on the presence of *calco-globulin* along the edges of forming dentine and among the odontoblasts in a number of the illustrations of developing dentine. In the discussion which followed the display. *Drs. Black and Sudduth* took exception to Dr. Andrew's interpretation of the tracts which he demonstrated "*calco-globulin*." *Dr. Black* stated that in his researches he had found that peculiar formation, a laminated globular formation like tiny onions of glistening bialine appearance, only in abnormal osseous tissue, as in pulp nodules, varicose veins, mal-formed teeth, etc. In the positions where it was pointed out by Dr. Andrews, he would be inclined to think the appearance might be due to some *post mortem* change in the tissues.

Dr. Sudduth said that in all his specimens of dentine, he had never encountered that formation. In the present case it presented itself to him either as *pathological* or *artificial*. In closing the discussion Dr. Andrews said that he was willing to place his specimens in the hands of Drs. Black and Sudduth, and if they pronounced them *pathological* he would accept it.

Dr. L. W. Comstock, Indianapolis, next read a paper on
ARTISTIC METHODS IN PROSTHETIC DENTISTRY.

This was a continuation of the treatment of the subject begun in a paper, published in the Ohio *Journal* in January. To carry out Dr. Comstock's ideas, the prosthetic dentist must also have the training of an artist. His eye must be trained to see, and his hand to record his observations, comparing the *real* before him in his patient with his *ideal* conception of classic outline and harmonious proportions. Just before adjournment the Secretary read a paper received from Dr. M. F. McGraw, Mankato, Minn., on

OBTUNDING SENSITIVE DENTINE AND CONTROLLING PERIODONTAL INFLAMMATION BY ELECTROLYSIS.

This method is not patented; all the requisites can be bought in the open market; it is always safe and no evil results from its use. Cocaine as an obtundent fails ninety-nine times where it succeeds once. Numerous other so-called obtundents prove failures except in drawing dollars. In electrolysis we have an agent always willing to do our bidding and only waiting to be called on. It deserves more thorough investigation, as the results will be found most gratifying. Dr. McGraw's method is to make a 12 per cent solution of cocaine in absolute alcohol, adding 6 per cent alum. A pledget of cotton is moistened with this solution and applied to the affected part. The positive pole being placed on the cotton and the negative pole on the cheek, a galvanic current from four cells is passed for three minutes, which is repeated after an interval of three minutes. This will be found effective in almost every instance, but may be repeated if found necessary. The treatment of an abscess, or the painless removal of pulps requires a stronger battery.

Owing to the lateness of the hour this paper was passed without comment.

TO CLEANSE THE HANDS AFTER THE WORKSHOP.

Dr. M. Vogel, writing on the subjects of cleansing the hands, says he has noticed that coppersmiths, tinsmiths, etc., whose hands become covered with a dirt from working in oxides and acids that cannot be removed by ordinary means, first rub them with warm oil, and when this has thoroughly penetrated, rub them with powdered borax. Subsequent washing with soap and water makes the hands perfectly clean. He advises those who have to use carbolic acid to go through the process above described first, and claims that in this way, (1) disinfection is made more thorough; (2) the hands are made purer than it is possible to make them with soap alone; (3) the hands remain soft and free from troublesome, rough epidermic scales, and the odor of carbolic acid is destroyed; (4) the uncomfortable anesthesia after washing with carbolic acid is avoided.

DR. ATKINSON HONORED.

One of the most delightful and enjoyable gatherings ever held by New York dentists was held at the "Gerlach," 55 West 27th St., on Saturday evening, March 16. The occasion was a complimentary dinner to Dr. William H. Atkinson, who has rounded out his fifty years of practice. The arrangement was in the hands of a most efficient committee, consisting of Drs. Benj. Lord, O. E. Hill, and A. L. Northrop, and they received the hearty thanks of all who were fortunate enough to be present. About seventy-five were present, and were presided over by the genial and always delightful Dr. Charles E. Francis, at whose right sat the guest, Dr. Atkinson, and the table was graced by the presence of Drs. Dwinelle, Lord, Bronson, Heitzmann and Rev. Dr. Backus.

Among those present we noticed Drs. John Allen, yet hale and hearty; Woodward, Bogue, Northrop, Carr, Perry, Howe, Marvin, Jarvis, Hill, Brockway, Van Woert, Myrick, Cook, Walker, Geo. Allen, Eaton, Levey, Watkins, Luckey and Stockton.

Dr. Francis introduced the speaking of the evening in a few well-chosen words, saying that we were gathered to do honor to a beloved brother dentist whose fame was world-wide, and to whom the progress in dental science owed more than to any other man. Few of us fully realize what he has done. He has inspired us all to a higher and better work, to think deeper and higher on the problems of our chosen calling than we would have done had he not lived, and to-night we all welcome him, and all love him.

Toast:—Dr. Atkinson, our guest:

As a man and a citizen we respect him; as our professional brother we highly esteem him; as a tireless leader in scientific research, a fearless propounder of the truth discovered, a generous giver of the fruits of his patient toil in this field, we honor him; as the warm friend and willing helper of every one who is honestly traveling along the same road toward light and improvement, we love him.

Dr. C. A. Marvin, "the silver-tongued" orator of Brooklyn, responded, saying:

Two considerations move me: one, my own personal interest in the subject, and what we should say for others. The thoughts and sentiments of myself and those of my Brooklyn friends whom I represent are in perfect sympathy in doing honor to the guest of the evening. It is a good thing to have the good-will of our fellow-man, and it is a good thing to gain it amid the sharp conflict of life. Eulogies are pronounced over the dead, but it is better far to have them spoken of the living. If you think to do a good thing, do it right away quickly. We are all glad to be here to help eat the dinner, but more glad to participate in the design of the gathering, the honoring of Dr. Atkinson, and we can from the depths of our hearts say to our guest; as a man, as a citizen, as a professional brother, we love you.

Toast:—(For New Jersey) Dr. Atkinson, our friend:

Ever ready to lend a helping hand to the earnest but weary student; to hold out a light for stumbling feet; to impart of his wisdom to them that lack; to add

inspiration by his stirring words to the discouraged; to stimulate by his unconquerable ardor the search for truth when it is in danger of flagging, and the effort for professional progress when it halts: his name will be remembered, honored and loved by his professional brethren in every city and every land whither they may direct their steps.

Dr. C. S. Stockton responded thus :

MR. CHAIRMAN:—I am glad to be with those who honor W. H. Atkinson, for no one deserves it more. I admire the man who becomes his own executor while yet in life and in the possession of all his faculties, and is in love and sympathy with his fellow-man.

He may endow schools of learning, erect buildings for hospitals and asylums, and out of gratitude to God rear costly structures for His worship; but better than all this, and I admire more the man who all along the pathway of his life has been erecting monuments in the hearts of his friends and inscribing on them the word *love*, and this is what our friend, whom we honor this evening, has been doing all these years.

I almost envy him his happy heart-throbs to-night. Sometimes in the past, in the sharp conflict of thought, hot words have been said and heart-aches have followed; there have been anxious hours over business cares; but I trust all these things have passed away forever, and only love and best wishes flow into your great absorbing heart from the corners of the earth wherever dentistry is known.

With what pleasure our friend can look out from the present Mount Pisga of dental excellence, and back into the low valley of uncultivated land of his beginnings. God does not endow the soul with all the virtues and graces in their order, does not stock it with a standing crop of good deeds and impulses of robust characters; but gives it so much wild land to till, saying, exert yourself to the utmost, see what a glorious Eden you can make from this untilled soil; it is deep and loamy, its possibilities are great. Our friend has cultivated well, and now when the Lord of harvest is soon to come, he brings his garnered sheaves with him in the exaltation of the dental profession and in the love of all hearts.

He has never cared for previously accepted dogmas, theories or faiths; but the only question with him has been, Is it a fact? Is it truth? and such deep earnestness, and such candor and uncompromising fidelity to truth, gives grand use to all lives and does make life worth the living.

The cup of life, somebody has said, is a punch-bowl, youth furnishes the spirits, middle-age the sugar, and old age the acid; but in our friend's case, old age furnishes the sugar. Queen Isabella hypothecated her jewels to raise money to equip Columbus. Those jewels lighted the path to a new world, and are the brightest jewels of her crown. So the many sacrifices made by our friend for the equipage of our young, and old, too, for their work in our loved profession, are his bright jewels in his crown of rejoicing to-night.

The sunset of life may glorify the landscape of life with even a richer glow than it wore in the morning. It is blessedly possible to grow old gracefully.

Dr. Atkinson was then called on, and it was evident to all that it was with the greatest effort he could control his deep emotion. He expressed his gratitude to his brethren, and hoped he had been worth the loving words of commendation spoken in his hearing. He thanked them most heartily for the words of cheer; they comforted him, and all

he could do was to say, God bless you all, my children and my friends.

Toast:—Atkinson, the scientist and microscopist.

Dr. Carl Heitzmann responded, saying:

About one year ago we feasted a man who boasted of a fifty years' successful practice; a skilful operator who had filled a great number of teeth and performed a great number of operations.

The man whom we honor to-night has not only done all this himself; but he has done a good deal more, since he wanted to know how the material is constructed on which he worked. He had the searching mind to find out the minute anatomy of the teeth, and the love of truth that led him to investigate the structures and to encourage such investigation. Can we ever do justice to such a man? But what could be our decision over a man who has done so much good to the dental profession, who helped the beginners, raised the professional standard, and urged on us all to be scientific in our work, to judge from anatomical features about the pathology and the treatment eventually to be entered on?

So deep has been his convictions that he often became a terror to his opponent, just as I am rough sometimes, if I have to fight ignorance and bad will. Is there an enthusiast who would measure his words when excited and defending his position? I should think not. That man is not worth much who always tries to be sweet, a honey-boy, to compromise and yield to opposite views, even tho' against his own convictions.

Atkinson has sometimes erred, no doubt; but he has always honestly admitted when he thought he had erred. That was more the fault of his teachers than of his own, for as he put it he had to unlearn a good deal before he became fit to learn

I remember when, twelve years ago, my "dear papa" entered my laboratory and took an insight into the work done there. So much did he become infatuated with the new researches, that he went round like a roaring lion, caught all the dentists whom he could get hold of by the collars of their coats, and brought them to my laboratory. Be blessed for what you have done, "dear papa" Atkinson! In the name of science, in the name of microscopy, in the name of my laboratory, and in my own behalf let me embrace and kiss you, and thank you from the depth of my heart.

If you have made mistakes, your generous mind, your honesty, your love of truth, have always repaired the errors.

My daughter will marry next month, and I have made arrangements with my neighbor at the dinner table, Rev. Dr. Backus, between the Bordeaux and the champaigne. He will perform the marriage ceremony. Such a bride before marriage was taught by her mother to be humble and yielding to her husband, and according to German ideas be his first servant. A friend of her's, a coquettish woman, called and told her never to yield; put her husband under her slippers; let him beg for any favor; let him be her servant. She became much confused, and when the groom arrived, she fell in his arms and with tears in her eyes, exclaimed: "Oh, dear, how can I ever make you happy?" His answer was: "Be as you are." And so I say to you, "dear papa," be as you are. Be generous to the erring, liberal to the ignoramus, encouraging to the beginner—friend to all, the beloved, honest old father of American dentistry.

May you live long and prosper, and your zeal for knowledge never abate. Be unswerving in upholding your convictions, indefatigable in pushing scientific work. Late, very late, may you close your eyes that shone so brilliantly for half century for your pupils and friends. In your last hour the most gratifying of your thoughts will be: I have not lived in vain.—*Archives.*

MISSOURI DENTAL COLLEGE.

At the First Annual Meeting of the Missouri State Dental Society, held in June, 1866, a committee was appointed to consider a proposition to form a dental college, under the auspices of the Society, with power to take such action as, in their judgment, the interests of the profession and the public required.

The committee, after patient investigation, decided that the prospects for establishing a college in St. Louis were so encouraging that they determined to apply for a charter.

An association was formed, as required by law, and a charter granted them in September, 1866.

Among the corporators were Drs. Homer Judd, H. J. McKellops, Isaiah Forbes, W. H. Eames, Wm. N. Morrison, H. E. Peebles, A. M. Leslie, and Edgar Park.

Under the charter the association appointed a Board of Trustees, to whom it confided the appointment of professors and other instructors, and power to make such changes in teachers or curriculum as the interest of the profession demanded. There were appointed thirteen Trustees, and the first Board organized by electing Dr. Isaiah Forbes, President; Dr. A. M. Leslie, Secretary; and Dr. H. E. Peebles, Treasurer.

The Board of Trustees appointed as professors Homer Judd, M.D., Charles W. Stevens, M.D., A. Litton, M.D., John T. Hodgen, M.D., Frank W. White, M.D., E. H. Gregory, M.D., H. E. Peebles, D.D.S., and W. H. Eames, D.D.S. These gentlemen constituted the first faculty of the Missouri Dental College.

The first announcement, issued in September, 1866, says, "Of the chairs of Anatomy, Chemistry, Physiology, and Materia Medica, it is deemed enough to say to those resident in the Mississippi Valley that the class will have the benefit of the full course given by these chairs to the matriculants of the St. Louis Medical College."

The organization of the school is such that the medical branches are taught by medical professors to dental and medical students alike, being the first dental college to perfect such an arrangement. Prof. Homer Judd, formerly dean of the College, refers to this in a valedictory address at the first Commencement as follows: "If, then, it is necessary for dental students to acquire a knowledge of the fundamental principles of medicine, it is manifestly proper that they should receive this instruction in those honored seats of learning where these studies have been taught for centuries, and which, it is universally admitted, afford greater facilities for this kind of instruction than can be elsewhere enjoyed." "The proper place for instruction in a medical college to commence is where the course necessarily diverges from that

pursued in acquiring a general literary education, and the proper place for the special functions of the dental instructor to begin is when the specialty diverges from the course of general medicine and enters on the theoretical and practical details of the science." "Recognizing these facts and fully aware of the defects that had hitherto attached to dental teaching, the founders of the Missouri Dental College determined this *approbrium chirurgies dentium* should no longer have cause to exist. This has been effectually accomplished, so far as the organization of this institution is concerned, by an arrangement with the St. Louis Medical College, through which the medical and dental students pursue these common branches side by side, the same advantages being extended to the one as to the other, and the same proficiency required of the one as of the other, that they may be entitled to the honors of their respective institutions."

At present, twenty of the twenty-nine dental colleges and dental departments of universities in this country have accepted and followed this idea in their organizations.

As will be noticed, this school is the fifth in order of the dental colleges permanently established. The methods of instruction and the advantages offered for clinical experience have kept pace with the times. The faculty at present consists of nine professors, with five demonstrators, three special lecturers, and ten clinical instructors. The class of '88-'89 numbered fifty-two, nineteen receiving the degree of Doctor of Dental Surgery at the last Commencement.

Prof. Homer Judd was President of the first faculty; he was also President of the American Dental Association in 1870; and he first brought about the teaching of dental students in medical colleges. Prof. John T. Hodgen was President of the American Medical Association when the Dental Section was created; and Prof. E. H. Gregory was President of the same Association when the resolution was adopted recognizing graduates of dental colleges as eligible to membership in that body. Henry H. Mudd, M.D., whose portrait appears as frontispiece in this number of the ITEMS is the present Dean of the College.

The graduates of the school are representative men in the West, and are represented in the faculties of four of the largest dental colleges in this Western portion of our country.

A. H. FULLER, M.D., *Secretary.*

Professor J. Foster Flagg says: With the combined results which I have had from individual use, and in our clinic at the Philadelphia Dental College, I can say Campho phenique is one of the most valuable medicament in our dental pharmacopeia.—*Archives.*

THOSE ELECTRO-METALLIC PLATES.

It is due Durand & Co., and the dental profession, that Dr. L. P. Haskell's article on the "Electro-Metallic Plates in the ITEMS OF INTEREST for March, be thoroughly reviewed by one who knows how the plate is made, how the combination is formed, what metals are used, the proportions of gold and silver, and who also knows, and firmly believes, that the proper way to build up a business is by a truthful representation of the article under consideration. The plates are a combination of *pure* silver and gold, the entire plate being deposited, not as the doctor says "two layers of silver and one of gold," but two layers of gold and one of silver, the silver being in the centre of the plate, where it is thoroughly protected from the acids of the stomach and saliva, by the gold, and, by the same means, the vulcanite is protected from the silver. It is true, "they are attracting much attention." I do not wonder that the doctor "fears they will not prove a success" for that the days of swaged plates are numbered, seems almost too good to be true. I am sure the doctor's fears would be wonderfully allayed if he would order one plate, and put it in practice where he could watch the results. Our work must rest on its merits. We do not represent the plate as a gold one, but instead, we take the utmost care that the dentist shall not do so either. The combination is good, and we find no difficulty in leading dentists to think as we do. The fact that a large plate of this material "cost but seven dollars," is mainly owing to another fact—that, having to depend on silver for strength, we are enabled to produce a plate at less cost. Not a day passes but we have occasion to state that twenty carat gold necessary to make such plates as we produce for seven and ten dollars, all complete, would cost the dentist from "twelve to fifteen dollars." We never put forth the idea that pure silver, and pure gold are as "stiff and unyielding as eighteen carat gold plate," but we do put forth the idea, with telling effect, that we produce dentures of sufficient strength to satisfy representative men in the profession. Any dentist who solders our plates or "heats them to a red heat," does so in opposition to our advice, and at his own risk (see our circular for metal attachment.) "And right here," we would call your attention to an article in the June number of the *Cosmos*, which recommends the use of rubber attachments in the place of solder for fastening teeth to a metal plate. We have mended our plates by soldering and depositing, with gratifying results. We are pleased to know that the doctor thinks our work "is beautiful and gives a perfect adaptation." While you are not giving your patients "a gilded silver plate," you are giving them silver, with sufficient gold to make it practically a gold plate.

DURAND & Co.

THE PRACTITIONER'S COURSE.

The following announcement of the *Chicago College of Dental Surgery* is a new departure in dental colleges. It so commends itself to every intelligent practitioner we wonder it has not been established sooner.

There is only one drawback. It should give the degree of D.D.S. to every one who successfully passes through the course.

As we have often said, we believe all our medical and dental colleges should award their degrees to all who show competency, whether they have been in the college a long time or a short time. In other words, if an applicant for a degree in any profession shows fitness in learning, character and skill, he should be awarded his coveted title irrespective of the place, manner or time by which he has prepared himself.

ANNOUNCEMENT.

The Chicago College of Dental Surgery has inaugurated this course of instruction in compliance with requests from practitioners in various sections of our country. It is intended to present a systematic course of didactic and clinical instruction for practitioners of dentistry.

This course is open to all legal practitioners, and it is available for the young graduate who wishes to acquaint himself with the practical duties of his profession, or for older practitioners who are desirous of pursuing some special branch of dentistry, or who wish to familiarize themselves with modern advances in any department.

The clinical staff of the infirmary will be on duty during the course and clinics will be conducted daily.

Superior advantages will be offered to those who feel the need of advanced or special training in practical and scientific dentistry.

Each member of the class who attends the full course will receive the practitioner's certificate.

The Practitioner's Course will begin Tuesday, April 1st, 1889, and continue till April 27th, 1889.

Fees—Matriculation,	-	-	-	-	-	\$ 5.00
" Course,	-	-	-	-	-	20.00

The regular Winter Session of Lectures will begin the latter part of September, and continue till the latter part of the following March.

The Spring Course of Lectures will begin April 2d, and continue till the latter part of the following June.

The requirements for entering the College, and for obtaining the degree, are fully described in the Annual Announcement, which will be sent to any address on application to

DR. TRUMAN W. BROPHY, *Dean,*

96 State Street, Chicago.

AN ALPHABET OF ANTISEPTICS.

BY. "MRS. M. W. J."

"Antisepsis will without doubt occupy a leading position in the therapy of the future."—TRUMAN.

Antiseptics simply control or restrain the growth of micro-organisms till a cure is affected. *C. M. Bailey.*

Albumen is an antidote to bichloride of mercury; the presence of the former therefore contra-indicates the use of the latter, a fact very generally disregarded in the present extended use of this antiseptic. *G. V. Black.*

Benzoic sulphide of sodium equals carbolic acid, and is superior to sublimate or iodoform; harmless and free from any disagreeable feature. *Heckel.*

Boracic acid stands at the head of the list of antiseptics, as a dry dressing for wounds. *B.*

Carbolic acid crystals one part, oil of cassia two parts, oil of wintergreen, three parts (1-2-3) has a range of antiseptic value much greater than carbolic acid alone, without the evil effects on the tissues. *G. V. Black.*

Cassia, oil of, has the widest range of power of any drug studied by Dr. Black, whether used in substance, in emulsion, or in solution. It compares most nearly with carbolic acid and boracic acid.

Drugs that are but feebly poisonous to the animal tissues have very short range of antiseptic value.

Diffusion of liquids takes place very slowly through narrow openings; hence failures in the antiseptic treatment of abscesses and sinuses.

Emulsions of the antiseptic oils form valuable applications to suppurating surfaces; a small quantity is thus widely diffused, and left in minute globules to gradually dissolve where most needed.

Eucalyptus preparations are very feeble poisons—that is they may be used upon the animal tissues almost at will, but they are also very feeble antiseptics. Eucalyptus oil is not effective in any proportion.

Fluctuation in quality, due to the conditions of their production, as well as to adulteration, occasions variable results in the use of the essential oils.

Five per cent of hydrochloric acid, added to the $\frac{1}{500}$ solution bichloride of mercury, protects it perfectly from decomposition, even in the full light of day. Without the acid it loses power rapidly.

Guard against the caking of dry antiseptic dressings over a wound surface, leaving an arch beneath which septic conditions may develop; the combination of an oil with the dry dressing may enhance its value. *B.*

"Cermicide" conveys the significance of the term disinfectant —a killer of microbes. *C. M. Bailey.*

Hydronephthol may be used very effectively as a dry dressing, tho not so kindly borne by the tissues as boracic acid. *B.*

Heat will often effect a cure in root canals where drug-antiseptics prove ineffectual. *Wooley.*

Iodoform is proved by the experiments of Dr. G. V. Black to have no antiseptic value, growth of micro-organisms occurring in the saturated solution among the undissolved powder, both in test tubes and on suppurating wound surface.

In the choice of an antiseptic it should be borne in mind that carbolic acid dissolves blood clot and consequently renews hemorrhage in fresh wounds. Corrosive sublimate checks hemorrhage. *L. A. King.*

Juices of the flesh dissolve crystalline antiseptics used in hypodermic injections. The conditions indicating this form of use may be presented about the mouth at any time. *B.*

Koch, of Berlin, and others, have proved the great reduction of value of bichloride of mercury in the presence of albumen.

Listerine forms a very agreeable antiseptic mouth-wash.

E. C. Kirk.

Mustard oil, which is one of the most diffusible of the antiseptic oils, is limited in usefulness by its extremely irritant action. *B.*

Mouthwash antiseptic:

Eucalyptol.....	220 gr.
Benzoic Acid.....	45 gr.
Thymol.....	4 gr.
Alcohol.....	3 fld. oz.
Oil Wintergreen.....	25 dr.

Leffmann.

Naphthylamine, a germ product which may be formed in tooth-decay, is itself a germicide, closely allied to the favorite antiseptic Naphthalin. *Leffmann.*

Naphthol is five times as active as carbolic acid and three times as active as creosote. Corrosive sublimate is ten times as active as naphthol, but it is also 187 times more poisonous. Naphthol is not absorbed and so does not effect the general organism. *Bouchard.*

Oxigenide of mercury is less irritant than sublimate, with less absorption by the tissues; it is therefore better adapted for use on suppurating surfaces.

Archives.

Oleaginous agents, not being coagulants of tissue, are diffused in their vapors throughout the entire dentine, disinfecting it more thoroughly than any of the agents heretofore used for this purpose.

Harlan.

Peroxide of hydrogen, as a solvent for antiseptics, gives an added value through the ebullition of the oxygen evolved, which carries the antiseptic proper to the most remote parts of the wound or abscess.

Permanent corrosive sublimate solution: dissolve 5 gr. bichl. m. in 10 gr. hydrochloric acid under the influence of heat. Dilute with 5 litres of water, which neutralizes the sulphates and carbonates present in the solution.

O. Bujwid.

Queer and unexpected results have been attained in some of Dr. G. V. Black's recent experiments.

Resorcin and Aseptol have valuable antiseptic properties, ranking near carbolic acid and oil of cassia.

Range of antiseptic value—the difference between the saturated solution and the greatest diffusion that will inhibit growth of micro-organisms.

Silica-fluoride of Sodium; a bland, non-poisonous material, with antiseptic properties second only to those of corrosive sublimate; probably a valuable ingredient for tooth powder.

E. C. Kirk.

Saturated aqueous solutions of the essential oils—an excess of the oil is mixt with water by violent shaking. This is kept at a temperature of 99° for twelve hours, when it is again violently shaken and returned to the oven for a second twelve hours, when it is filtered and refiltered till clear.

Two parts each of carbolic and tartaric acid, to 100 parts water, gives the maximum disinfectant power of carbolic acid. *Dujardin.*

Terpinol is indicated when a stimulating antiseptic effect is regarded as beneficial.

Use the common toilet-perfume-atomizer for filling the antral cavity with a fog of antiseptic vapor from heated iodine, carbolic acid, phenol sodique, etc.

Mewborn.

Until the wound has healed, there should be *continuous* application of the antiseptic drug. Micro-organisms are not destroyed by antiseptics; their growth is only retarded.

B.

Vaporizable camphors, which are antiseptic, are deposited from the essential oils, at a temperature a little below normal body heat.

Harlan.

Very poisonous drugs cannot be employed in dry dressings because of their solution in the secretions and absorption by the tissues.

Wintergreen, oil of, has no antiseptic value whatever, microbes growing freely in the emulsion.

Xtract of eucalyptus has an antiseptic value in restraining growths of microbes, tho it does not completely inhibit.

You cannot expect to do much disinfectant work in connection with the soft tissues, except in cases where some tissue destruction can be borne.

B.

Zinc and bismuth combinations with silica-fluoride of soda have been recommended for antiseptic use in the mouth.

Sudduth.

METHODS IN DENTAL COLLEGE EDUCATION.

DR. L. C. INGERSOLL, KEOKUK, IOWA.

(In *Cosmos*. Read before the Joint Meeting of the American and Southern Dental Associations, at Louisville, Ky., August 31, 1888.)

Education is a term which signifies the state of the world's enlightenment and progress,—a coming up out of a low state to a higher state of mental, moral, and physical development.

It is an interesting study of history to look back over the long track of the ages and observe by what methods the world has been educated. The race is made up of individuals, each in a condition of primary independence. Hence, the race as a whole can only be educated by an education of the individual members of the race. How to accomplish this successfully is the problem of the world's advancement. Men are not like grains of wheat. When you look over a Dakota wheat-farm stretching out miles before you, you see every head of wheat like every other head ; and when the threshers give the chaff to the wind and gather up the millions of bushels of grain, each grain is like every other grain, with the same possibilities of development and growth. Cadmus,—who might be styled the mythical father of dentists,—catching the inspiration of nature, thought to sow teeth, as wheat, and raise an army of men. When they came up, unlike wheat, they were of every degree of strength, endurance, adaptability, and possibility of development and service. This difference in mankind makes the problem of education complex and difficult. Shall it be of the individual alone, or of masses of individuals? When a number of individuals are gathered with a common purpose to learn something, we call it a school. Schools are as old as human society. When the school is gathered, the question arises, How shall it be organized, how begin, and how proceed? These are resolved into the one question of *methods of education*.

The school is a natural product of society; but methods of conducting it are artificial and arbitrary. It is easy to organize for educational purposes, but not easy to agree on the methods of accomplishing the object, for many do not see the importance of well-defined methods.

The true value of a school, measured by results, does not depend so much on imposing edifices, ample equipments, and a long list of instructors, as on the methods and manner of instruction. The method of doing anything is the all-important feature of the doing. The valued and ideal home is not constituted chiefly by a commodious house, elegant furnishing, husband, wife, and children, but by the manner of conducting the home. Many medicinal compounds are valueless unless a certain method is observed in the compounding. It is strange that intelligent men do not more highly appreciate the importance of methods.

I had occasion a few days since to make a concrete for a foundation, and I instructed an intelligent mechanic, accustomed to the work, as to how I wanted it made. He very readily comprehended the necessity of having good cement, clean, sharp sand, macadam rock free from dirt, and clear water; but he did not seem to comprehend the importance of exact methods in putting the materials together. He got the general idea that these materials were to be mixt; but he did not comprehend that he must adopt a method that would secure a coating of cement on each grain of sand, and a coating of cement mortar on each piece of macadam before shoveling the mixture into the trench, to secure the solidity of the mass.

Every dentist knows that elegant equipment of an office will not secure good gold filling; but the value of the filling depends on the method of putting the gold into the tooth to be filled.

Is it not time to examine our educational methods? Chief among these is the lecture system. This method of communicating instruction has the merit of great economy of time and labor; for a man can deliver a lecture to one hundred pupils in the same time and with the same effort as he could deliver the same lecture to an individual. As an argument in favor of the lecture system, it admirably favors the lecturer. But other persons are concerned besides the lecturer,—there are the teacher and the taught. Each pupil has an individual interest to be served. The lecture is not given for the benefit of the teacher, but for the benefit of the pupil. How are *his* interests served? Is the lecture system the best mode of instruction for the pupil?

In no period of the world has the giving of solid and permanent instruction been intrusted to the lecture system. It is adapted to but

two classes—to children too young to read, and to those already well instructed and educated.

To derive benefit from lectures the pupil must have a disciplined mind, quick perception, ready analysis and generalization of thought, comparison, and a retentive memory. But unfortunately do not fill our colleges. Our students belong to the more numerous middle class, who do not possess these qualities. They need to *study* and take time to revolve in the mind the thought given, that they may see its bearing on the general subject and to understand its practical relations. These processes of mind are not possible with the rapid flow of ideas communicated in a lecture. Nor does the custom of note-taking very much improve his facilities for acquiring a knowledge of the lecture. There are but few rapid writers among students, and even the best of them, while jotting down one important fact or principle, is quite likely to allow several just as important principles expressed by the lecturer to pass unnoticed. It must therefore be evident from every view of the case that the knowledge acquired and fixt in the memory by hearing a lecture is extremely limited. If the student makes the attempt to refresh his memory by reading reference-books, he is sometimes obliged to go over from one hundred to two hundred pages; which having read, he finds himself clearly recognizing but here and there a thought expressed in the lecture. In the pressure of work forced on the student by the numerous appointments of the day, very few find time for such reading except by intrenching on the hours of sleep.

Before the age of books, lectures and oral instruction were the only means of popular and professional education. At the gates of entrance to large cities, where, on the days of the performance of various religious rites, there were gathered large assemblages of people from the adjacent country, the lecture platform was established. But not this alone. Groups of individuals were here and there gathered by those specially adapted to give colloquial instruction. In a lecture recently delivered by Henry Clay Trumbull at Yale College, he says, "It was about 80 to 70 B. C. that Simon ben Shetach, as president of the Sanhedrim, established a system of elementary religious schools. In addition to these elementary Bible schools, there were more advanced Bible schools in connection with every local synagogue. The afternoon service of the synagogue was one of interlocutory Bible study for young and old together. The method of instruction was entirely interlocutory and catechetical. Great importance was attached to this method. A responsibility was regarded as resting on the Jewish teacher to *teach* his scholars, not merely *talk* to them."

It was at the time of this strict adherence to the interlocutory method that Christ the Divine Teacher was born. He is spoken of as

both preaching to and teaching the people. His sermons were very few. But he often taught in the temples, by the wayside, on the fishing-grounds, in the market-places, and often called small groups aside to some retired spot for instruction, when his method was that of dialogue, or questions and answers. These are most worthy examples of the sure and true method of permanently fixing instruction. This was an age without books. The manuscript rolls chained to the platform in the temple, or locked in the archives of the government, were accessible only to the teachers.

In the days of Egypt's greatness thousands of manuscript rolls of papyrus was gathered in the great Alexandria Library, treating of all subjects of science and religion ; all the specialties of medicine were taught, even dentistry, by lectures and otherwise ; the teachers only, by special favor, having access to the library. Hence it will appear that the lecture system was a necessity growing out of the want of books. But the lecture system did not lose greatly its popularity by the invention of the art of printing and the introduction of books. For the priests, who were the only authorized teachers, had taught, and the people had believed, that their words were inspired by the gods, —that knowledge gained otherwise than from them was but deception and lies. When the people came to them as the only true source of knowledge their pride was greatly fostered, and to keep up this inspiring flattery it was necessary that the teachers should discourage the use of books. Is it not true now that there is much of pedagogic pride to be overcome before the advent of text-books into our professional schools ? Do not instructors hug to their bosoms much of solacing flattery when the class sitting before them respond *ipse dixit* ?

We may learn much from religious schools, which are well known for thoroughness in imparting and fixing instruction permanently. The Jewish, Catholic, Presbyterian, Methodist, and Congregational denominations alike trust to catechetical schools chiefly for teaching doctrine, and to sermons for illustration and enforcement of the principles taught in the schools by the aid of elementary text-books. Homiletic teaching is an education more largely of the sensibilities than of the intellect.

We may learn much also from our literary institutions where the elements of all science and learning are taught. In all grades of these schools, from the common school to the highest college, the method is that of text-books without lectures, and the recitations are catechetical. There is no other method of instruction so impressive as questions and answers.

The most effective political speech I have listened to during the recent political campaign was one delivered by Hepburn, of Iowa,

which was made up entirely, from beginning to ending, of questions and brief and pointed answers,—the interlocutors introduced being father and son talking over the political differences of the two great parties.

Think of teaching arithmetic and grammar by lectures, instead of by text-books of rules and principles to be memorized ! The lecture is legitimate in the higher branches of mathematics,—in practical trigonometry and astronomy,—and in philology and the structure of language: for the pupils in these studies are educated up to the lecture standard. But in elementary teaching the lecture should take the lower place, not the higher.

The educators in our common and high schools make a constant study of methods of instruction. The normal, a modern institution, is a school for the inculcation of methods of education. Yet how little do our professional schools profit by it ! Why not teach dentistry, in its scientific branches, as mathematics and languages are taught ? We need to have more teaching and less talk,—more study of books and less rambling over the broad fields of science in the gay attire of eloquent words. Can you teach botany by taking your pupils on a stroll through a flower-garden, or by giving them a ride over the prairie on a cart ? No ; the student must get down out of the cart and pluck the flower, and with book in hand analyze it. He must pull the various grasses and compare them closely by study of their peculiarities.

The method in our colleges and universities for more than a century has been to give instruction, almost exclusively, by text-books, and recitations, requiring that rules and principles be memorized from the text, word by word. Memorizing the text is one of the most important principles of elementary education. I can speak from experience, having required this in my own teaching for the past three years. Our students in far the larger number are qualified only for elementary methods. Why then adopt so generally methods adapted only to educated minds ? Fifty years ago the larger number of those who offered themselves to the professions were graduates from literary institutions. In cases not of this class they were persons who showed unusual aptitude for study, and were self-educated. Such men are qualified by discipline and development of mind to receive instruction through the medium of lectures. What I have said thus far is designed to stir up the minds of teachers and students, and the profession generally, to the necessity of simple, brief, elementary text-books of dentistry,—not elaborate, exhaustive treatises and reference-books, but books of rules, principles, facts, and illustrations, pointedly and concisely stated, so that they can be readily memorized by the pupil.

[CONCLUDED IN OUR NEXT NUMBER.]

TEETH FROM A ZOOLOGICAL STANDPOINT.

PROF. C. C. NUTTING, OF IOWA UNIVERSITY.

The lengthening of the incisors has caused some curious modifications in the position of the molars. These are as follows, according to Professor Cope: 1st, a posterior pressure has caused a backward extension of the molar bone and a posterior position of the molars; 2d, this same pressure causes the oblique "set" of the molars.

Time will admit of nothing but a glance at the great order Ungulata, or hooved animals.

There are two interesting correlations between the teeth and the other anatomical features which are worthy of note.

1st. The specialization of teeth runs parallel to specialization of limbs. For example, the skull of the tapir has what is called an un-specialized dentition for the order Ungulata. In other words, it is old-fashioned or primitive. The incisors and canines are not particularly developed in any way, and the molars are provided with tubercles—an ancient style of architecture. Now, if we had the entire skeleton of this animal before us, we would find that its feet are as old-fashioned as its teeth, having four toes on the fore-foot and three on the hind-foot.

Now let us consider for a moment the horse's skull, more particularly the teeth. Here we have a highly specialized dentition. The incisors, instead of being chisel-shaped as in many forms, are elliptical on their apposed surfaces, and are further characterized by having an inflected fold of enamel, like the turned-in finger of a glove. This fold incloses a cavity which furnishes the "mark" by which the ages of horses are told.

These molars are probably the most perfect, grinding teeth in existence. The "bur" of the grind-stone is here produced by a complex system of enamel folds admirably adapted to the comminution of food. Notice also the great length attained by these molars before giving off fangs. Taken as a whole, therefore, the dentition of the horse is highly specialized.

Looking at the foot, we find it the very type of a highly specialized organ of locomotion. The toes are reduced to one which represents the middle toe of other animals, the toe being simply a modified nail.

2d. The other correlation to which I referred is that existing between horns and upper cuspid teeth among ruminants. No animal with horns possesses upper cuspids, and all ruminants without them have either horns or tusks. Here we have another instance of the unlucky Peter suffering for the benefit of Paul. Not only is this true, but a still more remarkable fact is that all horned ruminants are without upper incisors, in the adult state, at least.

It will be needless as well as unwise for me to attempt to discuss the human dentition before this audience, and so I will simply remark that the teeth of man, as well as his hands and feet, are very old-fashioned in structure. We may not like to admit it, but our dentition is about on a level with that of the pig, and hence lower than that of the ruminants. The principal peculiarity of our teeth is that they have been reduced to a common level, or nearly so. Civilized man, with his cooked food and knives and forks, has little or no use for projecting cuspids or cutting teeth, and the man of the future will doubtless have less teeth than we have.

Among carnivorous mammals to which we now turn, we find an exclusively predaceous life and a correspondingly striking modification of teeth. These animals are equipt for seizing living and often active and powerful victims, hence the cuspids are elongated, enlarged and pointed, and often recurved so as to constitute the best of grappling instruments. This enlargement of the cuspids has resulted in a corresponding reduction in the increase of one organ at the expense of associated parts, but it also results in a direct advantage to the animals, as large incisors would impede the work of the cuspids, inasmuch as they would mechanically prevent the latter from sinking deeply into the flesh of the victim. The cuspids are further "cleared for action" as it were, by the reduction in size of the nearest bicuspids.

But a still more marked characteristic of the carnivorous dentition is found in the so-called sectorial tooth, an instrument admirably adapted to cutting animal food.

We find in the lion's skull a tooth with a decidedly different form from any heretofore considered. The central portion of the crown is modified into a cutting edge which meets a similar edge of the sectorial of the other jaw in such a way that the action of the two blades of a pair of shears is produced. We have all noticed how a dog in gnawing a bone will use the teeth in the side of his jaw rather than those in front. He is simply bringing these sectorial teeth into play.

Another fact worthy of notice is that the general "set" of carnivorous teeth is such that their crowns are slightly inclined forward. This Prof. Cope explains as a result of the pull forward to which those teeth have been subjected in tearing flesh. You will remember that we found a backward push in the Rodent's lower jaw and a backward "set" to the teeth.

We will now examine for a moment what Owen considers the most highly specialized of all dentitions—that of the elephant.

The tusks are enormously enlarged and lengthened incisors. They are very similar to the long incisors of Rodents. You will remember that in discussing that group we found that if one of the incisors failed

to meet its fellow of the other jaw it would go on growing indefinitely. These tusks are practically the same thing growing indefinitely from the premaxillaries of the upper jaw. The difference is that the tusks nominally meet no apposing tooth in their development and hence form weapons for defense and offense, as well as convenient tools for various purposes.

The very young elephant is said to possess a small deciduous tusk which is afterward replaced by a large permanent one.

As we would expect from the laws of correlation heretofore advanced, the elephant has no incisors except the tusks and the canines are completely suppressed.

The molars here attain a complexity found in no other animal. Their size is greater, even in proportion to the size of the animal than any other, and their complexity is unique.

The exposed crown is divided into a series of perpendicular plates set transversely. Each plate consists of a body of dentine coated with enamel and bound to its fellows by cement. If we should detach one of these numerous plates, we should find that it consists of a series of slender columns or long crones arranged in a vertical series extending across the plate, and in fact, constituting the plate.

The elephant's full complement of molars is six in each jaw. But only one entire molar or parts of two are functional at any one time. While one tooth is in use another is forming back of it and gradually take its place pushing its way from behind forward till by the time No. 1 is worn out No. 2 occupies its place and No 3 is forming, etc., till six molars have been formed in each side of the jaw.

This dentition is so unique that zoologists would probably have been unable to explain its connection with other forms were it not for the light thrown on it by the discovery of fossil proboscidians which show plainly the course of development taken by these strange molars.

The molar of mastodon is not strikingly different, except in size, from any other tuberculate molar, such as that of the pig for instance. The mastodon possessed three of these teeth in each jaw which were deciduous and followed by three other permanent ones. It also possessed tusks in the lower as well as the upper jaw.

Another form of mastodon has been discovered which presents a dentition intermediate between this mastodon and the elephant. The ridges of the molars were much more sharply defined and consisted of rows of smaller tubercles. Now imagine these ridges gradually deepening and their summits coming together, and we have the plates which characterize the typical elephant's tooth before us.

These molars which are forming in the back of the jaws proceed forward in the arc of a circle and the bony plate forming the sockets moves forward with them.

We have now passed over a few typical examples of the more pronounced modifications of teeth to be found among vertebrates. From the papilliform tooth of the shark to the enormous tusks and complex molars of the elephant is a long road at best, and if it has not been wearisome as well as long to you who have so patiently endured it, I shall be content.—*Iowa Transactions.*

AN AMERICAN DENTAL COLLEGE COMPARED WITH THE COLLEGES OF EUROPE.

F. E. WEBER, SENIOR STUDENT OF THE MISSOURI DENTAL COLLEGE.

Having graduated at a university in Switzerland, and being now senior student of an American dental college, it is obvious that any difference in the systems of dental education, as exists between the countries on this and the other side of the Atlantic, must present itself to me with increased distinctness. Thus, following the example of your correspondent at Iowa University, I will try to give you a brief description of the college I am now attending, referring to its qualities as they appear to me, and trusting that the aforesaid difference of nationality on my part will stand as a sufficient warrant for the unbiased nature of my report.

The Missouri Dental College is situated in the very heart of the great city of St. Louis, in connection with the St. Louis Medical College. Its average number of students being rather small (the present class numbering fifty) in comparison with some of the larger dental institutions of the United States, there is a rare opportunity given to every single man for thoroughly acquiring all the necessary practical instructions that tends to shape and eventually turn him out a worthy member of the dental profession. For the purpose, two large, splendidly fitted operating rooms have been arranged for the use of the students (one just recently erected), with two large rooms devoted to laboratory work, supplied with all the necessary appliances, as benches, tables, lathes, furnaces, etc. The constant call of patients furnishes an abundant supply of material for practice and clinical demonstration. Besides the specially dental lectures, all the theoretical branches, as anatomy, surgical anatomy, surgery, clinical surgery, *materia medica*, physiology and chemistry are taught by professors of the St. Louis Medical College, the oldest medical institution in the city; also, exercises in practical anatomy and chemistry, the former occupying two hours every night. During lectures of a demonstrative kind, it is the custom here for the senior students to enjoy the privilege of occupying the front seats, and getting the first chance in every respect, because their examination, which takes place at the end of the session, will call them to account for their ability in all the different branches taught. The Missouri Dental College being practically a branch of the St Louis

Medical School, the student in dentistry receives the same instructions from the professors of the medical faculty, and is required to pass the same examination as the medical student in the branches enumerated above. The hours destined for attendance at the school are from nine o'clock in the morning till six o'clock at night, thus occupying the greater part of the day, and, nevertheless, allowing ample time for private study.

There is, in reference to the lectures here, one point which particularly struck me as an entirely new but very advantageous custom: it is the "quizzing." I am fully convinced that only by means of this the student can be prevented from that well known fatal practice of allowing all his studies to accumulate till a short time before the final examination, and thus creating in his mind nothing but an inextricable confusion of ideas instead of a lasting, valuable stock of clear, distinct notions. So far as my knowledge goes, this "quizzing" is not practiced at the universities of the European continent; neither are the students there subject to so strict a control in their attendance at lectures and special clinics, but enjoy, taking it all around, a greater amount of liberty than may be found at the colleges in this country. On the other hand, however, the question is, whether too much freedom would not, act as a drawback to a man of rather unsteady disposition, by giving him, more opportunity to indulge in anything which might induce him to neglect his duty, though, by right means, a grown up fellow should be expected to appreciate the fact that he is not learning for the teacher's sake, but for his own.

This gives a rough outline of the course of studies at the Missouri Dental College, but it is my duty to mention another important point, the omission of which would be wholly inexcusable and leave my description most imperfect. There dwells within the precincts of the establishment I have been speaking of, an invisible agency, a spirit, which exercises a beneficial influence on everything and everybody—an advantage beyond the value of any money. This mysterious medium possesses the power of converting work into pleasure, weariness into perseverance, and shirking into energy. What is it? "Fraternity" and "Equality" are its names; "kind feeling" and "friendship!"

I came over from Europe, with two friends, at the end of last September; we were total strangers, in the proper sense of the word, to the place, and everybody connected with it; but the friendly, cordial way in which all the professors and students met us from the beginning, surpassed all expectations, and made us feel at home after a very short time. This kind reception, our republican brethren in America gave us, we shall never forget, and I am happy to have found this opportunity of being enabled to express, openly, our thanks for it.

Indeed, institutions of this kind, where teachers and students are tied together by the bonds of mutual consideration and esteem, where the former, in disregard of their valuable time and personal interests, devote themselves to the toilsome work of instruction with such anxiety and indefatigable zeal, must thrive, because they deserve it. May other countries soon follow this example, by trying to get up a similar spirit within their dental colleges; this would be the wisest and also most professional display of feelings they could give.

I am happy to state that American dental colleges, and their graduates are highly considered in Switzerland. This is already sufficiently proved by the considerable number of Swiss dentists coming over to America to complete their professional education. The dental law of that country recognizes foreign diplomas, not exempting the United States, which, in comparison with Germany or England, are very favorable.

Great efforts have been made of late to raise the dental profession in Switzerland, and a so-called "Concordat" is equally regulating now the same dental laws for every Canton, as it has been in medicine for nearly twenty years. The dental examination of the present day requires of the student as much scientific knowledge as in any country I know of, and the schooling necessary for admission to the university is more extensive than in England. But the practical education in dentistry has not yet arrived at the stage of being taught at the colleges by clinical instruction; the student takes a three years' course with a preceptor. However, it is to be expected that even this valuable and almost indispensable addition will be made at not too distant a date, and, as I hope, after the best.—the *American system!*—Archives.

Crown Die Plate.—Instead of the "hubs" made for use with the S. S. White Co.'s die plate, I use large buckshot, or round bullets. I take a piece of gold plate of a suitable size, lay it over the proper die, and placing on the centre of the plate the ball end of a plugger handle, strike it lightly with a mallet so as to make a slight dent in the plate. In this dent I place the lead bullet for a molar, or the large buckshot for a bicuspid crown, and with a heavy hammer pound the lead flat. By this method I avoid all danger of pounding the fingers, as will sometimes occur in holding the "hub" in place on the plate. The ready purchase of the shot or bullets saves the cost of the hub-mold and the trouble of casting the hubs. Lead, however, is too soft to produce the soft definition of the cusps which the dies are capable of, and therefore either the hub-metal, or soft solder cast in a bullet-mold, will be found preferable to the buckshot or bullets. In this manner any one may quickly strike up the crown cusps in smooth and beautiful distinctness of definition.—L. M. MATHEWS, in *Cosmos*.

RASH REASONING IN DENTAL SCIENCE.

One of the first steps toward true knowledge is to know how little we know. One of the next is not to mistake our own convictions in science for infallible truth ; for, however honest, they may be false and foolish. When searching in the obscurity with which Nature has wisely concealed her secrets, one must blunder and stumble over many obstacles ; but while "to err is human," "to try is glorious," and no honest effort is wasted, tho it may fail. Many a great idea was conceived in the womb of failure and even despair. As in the material world, so in the world of thought and reason, there is nothing lost or wasted ; and however often we miss success, there has been, or will be, compensation in the effort. Yet one cannot be reconciled to hasty generalization and superficial study, which too often passes current in this fast age for sober research. Each of us must candidly confess that we have often been led astray in our opinions by the dust we have thrown in our own eyes, as well as by neglect to follow to the end where investigation led us. But when men pose as leaders of thought and science, we have a right to expect the most careful and impartial research. We have students whose labors we have learned to respect, even when time and better knowledge proved them in error ; but there is a growing conviction in the dental profession, that much recent physiological and pathological investigations has not been pursued with that close analysis and impartial desire that always reveals truth. We have men revered by us all, earnestly and honestly putting everything known to the proof, and not fearing to confess, when new light breaks on them, that often they were wrong, tho they would have once staked their reputations they were right. Yet we have speculative teachers who attempt leap before they can creep, and whose intolerance to the opinions of others weaken our confidence in the value of their own. They seem to spend their leisure inventing impracticable arguments for impossible conclusions.

* * * * *

It ought not to be any humiliation to acknowledge one's ignorance when we consider the mistakes made in our professional researches by earnest, intelligent and almost inspired men. It is this spirit which stigmatizes men like the Jones, Salter, Sewill, Magilot, Parreidt, Taft, Garretson, Kingsley, and W. D. Miller, and which makes one feel, when reading a work like Dr. G. V. Black's "Periosteum and Peridental Membrane," that "here is a safe and conscientious guide." We would all find a help to modesty of personal opinion, as well as an inspiration to sincerity in research, if we could keep in memory the saying of old Confucius, "What you know, to know that you know it; and what you do not know, to admit that you do not know it, that is knowledge."—*Editorial in Dominion Journal.*

ELECTRO-METALLIC PLATES.

DEAR EDITOR:—Dr. Haskell's remarks on this subject are pertinent when so much has been claimed for the subject.

I have tried it practically, and, like Brother Haskell, found it wanting. I cannot see that we are justified in either accepting it, or trying to induce our patients to accept it, as a gold plate. The great time lost in transit of models and their possible damage, the destruction of the model in the process, the great liability to become broken, and difficulty of repair are serious objections. One feature in particular is the tendency to scale if the edges are filed, showing the deposit to be irregularly and uncertain, as we all know deposits of copper likely to be.

Again, it is impossible to try a partial plate in the mouth and get the articulation if the least undercut is present, as there is no spring in the "electro plates." Consequently, displacement must take place, which is impossible to correct.

A fall would be fatal to the usefulness of the denture.

Brother Haskell's question as to what causes the rigidity is simply explained. Deposit by electrolysis is simply adding crystal to crystal, not like melting and crystallization forms, but packing very lightly edge or point in contact forming a structure with minute divisions giving a bridge-like formation. If such metal is pressed or burnished, it becomes soft like melted metal. The electro-metallic plate cannot be soldered, as there is some salts of the metal enclosed in the minute divisions that the heat of soldering will not convert into the metallic form again; therefore shrink away from the flux.

I herewith send you a pin of this metal made by Ward, showing its splitting propensity. If examined under a powerful glass, one can see impurities, and also the globular deposit packing on each other. These I think contain the metallic salts, and offer resistance, while the spaces make its specific gravity less than a plate of metal rolled the same size.

D. GENESE.

Yes, the sample you send shows the defects you mention. Copper plates formed in the same way become close-grained, strong and elastic, by after pounding and rolling; perhaps, these plates might, if the very use they are put to did not prevent this after process.—ED. ITEMS.

Theodore Gill says that science is a goddess who is rich in attributes, ready to reward her worshippers, but coy in her gifts. She is generous only to those who worship at her shrine in sincerity and truth, and who supplement their prayers by continual labor and deeds.—*The Microscope.*

A BATCH OF HINTS.

BY R. D. IN "DOMINION JOURNAL."

You invite hints in brevity as well as more studied articles; and I believe there is not a dentist living but could send you an original batch several times a year.

Taking a Bite.—Trim your wax, if for upper or lower set, to the contour and length. I once thought that sufficient, but now I get accuracy itself by taking two teeth, if plain teeth, or a couple of the blocks, if gum teeth, cutting away the wax exactly as it has finally to be cut away, to let in the teeth, and then simply set these samplers to the exact length and prominence they are to remain.

Lining Teeth.—In lining bicuspids and molars for gold plates, use heavier backing than for front teeth, as these teeth stand a greater strain. Also add a bit of plate, thus doubling the lining at the bottom next to the plate.

Before you extract for a set, take an impression of the natural teeth, and have it on your laboratory beside the substitute.

Arsenic.—Before applying for the destruction of a pulp, anesthetize the head of the latter by holding in contact a pellet of cotton, dipt in hot, carbolic acid. Most dentists use too much arsenic. If the decomposed dentine is properly removed, and the pulp fully exposed, a small pin's head size of arsenic is sufficient.

Facial Fistula.—When a fistula has opened on the outside of the face, on account of poulticing or from other cause, do not extract the offending tooth till you make an artificial fistula inside the mouth. The outside fistula will heal by granulation. If you extract the tooth before doing so, the tissue certainly will be greatly depressed, and an uglier scar result.

Over-Medication.—In treating aveolar abscesses, we may have too much of a good thing. Many a case of gonorrhea would get better if syringing was not so often persisted in. It is the same with pumping carbolic acid, peroxide of hydrogen, bicloride of mercury, etc., into alveolar abscesses. Periods of rest ought to be allowed, or only warm water substituted.

POISONS AND THEIR ANTIDOTES.

FROM DENTAL OFFICE AND LABORATORY.

The following brief summary of the most rational and simple antidotes to the commoner forms of poison in daily use by artists and artisans was compiled for the *American Analyst* by Dr. Francis Wyatt, and it will be seen that he has suggested the most appropriate

to be applied in any emergency, pending the arrival or in the total absence of a skilled medical practitioner, thus:

POISONS.

1. Acid—Carbolic, sulphuric, nitric, muriatic, nitro muriatic, creosote, iodine, phosphorus.

2. Chromic acid, chromates, all preparations or compounds of chromium, antimony, copper, mercury, or zinc.

3. Ammonia, soda, potash, alkaline, silicates, and sulphates.

4. Prussic acid and its salts, all cyanides and sulpho-cyanides, oil of bitter almonds, and nitro-benzine.

5. Ether petroleum, benzine, fruit essence, concentrated or absolute alcohol.

6. Compounds of baryta and lead.

7. Compounds of arsenic.

8. Oxalic acid and its salts.

9. Nitrate of silver.

10. Nitrous fumes of vapors, arising in vitriol or chemical works.

ANTIDOTES.

White of egg well beaten up with water. A teaspoonful of mustard flour in a cup of hot water. Very thick lime water, (in case of sulphuric, nitric, muriatic or nitro-muriatic acids.)

Abundance of white of egg in water. A teaspoonful of mustard flour in water. Copious draughts of an infusion of salt herbs.

Strong vinegar and water. Large doses of oil. Large doses of milk.

Continuous and heavy douches of ice cold water over the head and spinal column. Mustard plasters on the stomach and soles of the feet. Prevent sleep.

Plenty of mustard flour in large quantity of hot water. Cold water douches. Fresh air. Prevent sleep absolutely.

A teaspoonful of mustard flour in warm water. Strong solutions of Epsom salts and Glauber's salts in cold water.

A teaspoonful of mustard flour in warm water. A teaspoonful of dialyzed iron mixed with the same quantity of calcined magnesia every five minutes for one hour. Then plenty of oil, or milk, or some mucilaginous tea—say linseed.

Very thick paste of lime and water by large spoonfuls at the time. After several of these, large draughts of lime water. Finally, 4 ounces castor oil.

Large doses of ordinary kitchen salt dissolved in water after which one teaspoonful of mustard flour in warm water.

Frequent and small doses of strong acetic acid—the stronger the better.

A QUICK AND EASY WAY OF CONVERTING THE ORDINARY LOGAN CROWN INTO A BAND CROWN.

DR. E. L. TOWNSEND, LOS ANGELES, CAL.

Prepare root as is usual for the Logan crown. Adjust crown so that it articulates properly. Measure root with fine wire. Cut band so that it *fits*. Solder and burnish down on root.

Shape a plug of wood to correspond to size of Logan pin. Place in root cavity, and fill space between band and plug with modeling compound; chill and remove band plug intact. Melt fusible metal by holding over annealing lamp with a pair of pliers; when melted place band over socket, allowing wooden plug to enter socket; cool and remove modeling compound and plug; this gives a tight grasp on lower end of band, and does not allow it to change its shape. While fitting the crown into it, place the Logan or Brown crown in the band, allowing the pin to enter the socket; drive down till the porcelain comes in contact with the metal. In this way you stretch the gold around the porcelain; now burnish down tightly. If carefully performed, the articulation should be the same as before the band was put on.

This is the strongest way a crown can be set, being a combination of dowel and ferrule. It need not show much gold. It saves time and money to the operator. Thirty minutes is ample time to fit the band, and fit the porcelain to it.

You do not need to leave the operating room. 18k. S. S. W. solder will flow by holding the band over an ordinary annealing lamp, with a pair of pliers grasping the twisted ends of the binding wire.

Use nothing heavier than No. 30 plate for bands—No. 32 S. S. W. crown metal in just the thing.—*Western Dental Journal*.

Preventing and Correcting Irregularity.—The following valuable suggestions are given by Dr. W. G. A. Bonwill in an article in the new edition of *Harris' Principles and Practice of Dentistry*. To commence as soon as possible after the seventh year, or as soon as there is evidence of decided irregularity. To watch all children's teeth from the third year and determine by the exploring needle, every three months, the exact position of the coming permanent teeth as soon as the first permanent molar has appeared.

To preserve, by early treatment, the first and second molars—temporary—even to the treatment of their pulps. To be sure the first permanent molars are preserved without loss of pulp, and to allow nothing to interfere with their full and free development in the arches, as on these teeth more than on any others are due the irregularity, from coming too far forward in the arch, from decay of proximal surfaces of

temporary molars, or from the tardy eruption of the permanent incisors, I endeavor to keep this tooth as far back toward the ramus as possible.

That all apparatus should be simple and, if possible, firmly fixt, so that the patient can have no control over it, and then see the case every few days. That constant and uninterrupted pressure is preferable. The antagonism of the opposite jaw will always be exerting a force to make them move back and forth in their sockets, and this makes sufficient intermittent pressure.

That while one plan, without some change in each case, will not do, yet the infinite number of apparatus is a greater nuisance to patient and operator.

That without the combined assistance of parent and child, better not commence. That nothing shall be withheld from the child or parent; but every detail, every risk, and the amount of patient endurance needed, the long time, and, when all is corrected, to allow of stay-plates, that the work gained may be retained.

Not least of all the factors, you must place such valuation on your services as will insure your interest and will drive the parties concerned up to their duties.—*Ohio Journal*

Method of Washing Amalgam.—DR. L. C. INGERSOLL gives his method in the *Archives* as follows: After amalgamating with the mercury in the palm of the hand, take twice as much of bicarbonate of soda and thoroughly mix it up *dry* with the amalgam till it becomes a flour-like powder, then use pure water to dissolve and wash out the soda. You will observe that the water in your hand has an inky blackness. This color is the black oxides or sulphides of the metals in solution. Wash in several waters and press between the fingers. Now compare the sample washed with the other unwashed sample, and you will see the increased whiteness of the washed sample; you have washed out a dark colored powder which does not combine with the other ingredients, but remains as an impurity, which gives to the mass a grayish look. Before putting it into the tooth, it should be rolled in a piece of chamois-skin, and wrung or twisted till both the moisture and the surplus mercury are pressed out. The chamois-skin is so good an absorbent that if the amalgam is thoroughly mixt and compacted in the wringing it will be found dry and ready for use. If this black powder is not washed out, the filling will never be as bright as it would have been had the amalgam been washed. If left in, it will be afterward dissolved from the surface of the filling and the filling itself, thereby rendered porous, and will be more likely to oxidize and be blackened by stains than it would if the surface had been rendered smooth by greater density in the packing, and then polished after a day's hardening in the cavity.—*Ohio Journal*

CAPPING PULPS.

Within the past two weeks I have had two *ancient cases of capping*. The first has been in service nine years. It was a buccal cavity of second molar. It was an amalgam filling that had failed a few weeks ago. It began aching as soon as the filling came out. It had never ached for nine years. On examination I found the pulp alive, as it bled by passing a pellet of cotton over it. I re-capt it and re-filled it and it is as quiet as a sound tooth.

Case No. 2 had been capt more than four years and was filled with fibrous filling. The tooth was sore, so I destroyed the pulp with arsenous acid and carbolic acid. The pulp was inflamed, but not dead. In destroying the pulp and extirpating it there was more pain than capping a dozen when the pulp is exposed.

I expect as pleasant results from the one case as the other. If that is true, which is the best practice?

Jacksonville, Mich.

J. A. ROBINSON.

It is astonishing that more dentists do not succeed in saving exposed pulps of teeth. For the last eight years we were in practice we *generally* succeeded. As Dr. Atkinson says: "It is bad enough to be obliged to go to a funeral, without voluntarily making one." When we were a physician, we never intentionally killed a patient, tho in spite of our best treatment, we did not save all we treated.

—ED. ITEMS.

Immediate Root Filling. Dr. F. W. Low, Buffalo.—I have now my attention attracted to the subject by a discussion at the meeting of the American Dental Association in 1887, where Dr. M. L. Rhein took issue with the old heads with reference to immediate root-filling, which he advocated. While every one of them discountenanced the method, they all said they had not tried it; Dr. Rhein said he had. I have also tried it, and present the record of the first hundred cases of pulp-treatment in my practice since I have used the immediate method. It includes all classes of pulp-treatment, even the most difficult form of abscess where there is no fistula, and all the various classes of teeth, incisors, cuspids, and molars. (After quoting the figures shown by the record and commenting on them, Dr. Low summed up his experience in the statement that ninety-seven per cent of the cases which present can be successfully treated by the immediate method.) The first essential to success is that the pulp-canal shall be cleansed perfectly. For this purpose I have used nothing else so satisfactorily as peroxide of hydrogen, followed by bicloride of mercury solution as a germicide. If there is a blind abscess the peroxide will penetrate it and cleanse it. If it will penetrate the tubules of the dentine, *why not an abscess?* In treating root-canals, it will go where no instrument will

penetrate. One volume of the drug forms twelve volumes in combination with the pus gases. It is not only an antiseptic, but combining with the gases of putrefaction it swells and effervesces, thus driving out the pus. I believe drilling through the alveolus in blind abscess is good practice. In one of my first cases, where I had subsequent trouble, the patient feeling, as he expressed it, as if there was a balloon inside his jaw, I took a spear-pointed drill, wiped a spot on the gum with carbolic acid to benumb the surface, and then drilled in. The patient said he did not suffer pain. The three essentials to success are, first, to cleanse or disinfect the canal and the tooth thoroughly; second, to get the canal perfectly dry with hot air followed by shreds of absorbent cotton wound on very fine broaches; and, third, to perfectly close the canal.—*Cosmos.*

WHY DID THEY ACHE?

A short time ago a young lady, about eighteen, came to me to have some teeth extracted. I examined her teeth, but could not discover any which I thought were causing pain, excepting the right lower wisdom, right upper first molar, left upper section bicuspid; but these were not sore to the touch.

I hesitated, but not knowing what else to do, I extracted them.

There seemed to be a place on each root where the periosteum was congested, and that was all I could discover that did not look right: I would like to inquire the cause of their aching. Ought I to have extracted them?

W. S. MARSHALL.

Phenol Camphor.—Phenol Camphor, which has lately been employed in the treatment of wounds, is prepared by dissolving three parts of camphor in one part of carbolic acid. This produces a rather thin, clear, yellowish liquid, with a strongly camphorous taste and smell, which mixes readily with fatty, alcoholic, and ethereal liquids, and easily dissolves cocaine, salicylic acid, iodoform, and other bodies. Phenol camphor prevents suppuration; it combines the cooling effects of camphor with the antiseptic properties of carbolic acid, and, unlike the latter, is painless in its action, and does not show acid properties.—*Ztsch. Apoth. Ver.*

Local Anesthetic.—Thoroughly dissolve twenty grains of cocaine in one ounce of ether (concentrated), and add one ounce of pure oil of peppermint; shake well before using. I have tried this preparation for about two years and find it gives better satisfaction than anything else I have used. In fact, for extracting sore teeth and fangs, where the inflammation is so great as to partially loosen them, I find it almost entirely does away with the pain, when applied from six to twelve minutes.—*Dr. G. S. Staples, in Archives.*

SAND-PAPER DISKS.

Editor ITEMS OF INTEREST :

Sand-paper disks having become so generally in use, it seems to me it would be convenient for dentists to be able to make their own. By the following method any one can make an instrument for cutting them.

Purchase a brass shell (cost about 7 cents), cut off the head or cap and bind to a cutting edge. Trim a piece of hard wood to fit accurately within the shell, pressing to within about a quarter or half an inch of cutting edge with a shoulder at upper edge. In the lower end of the stock place a pin exactly in the centre, size of hole desired in disk—a small wire nail is good for this purpose filed off square and allowed to come down even with cutting edge of shell. Lay your paper sanded side down on a block of wood, and as the disks are cut they will pass up on the pin, and when it is full you can remove the shell from the stick and take off your disks all ready for use.

For the different sizes you can get Nos. 8, 10, 12 and 16 shells, and each one you make will not cost over 7 cents.

Fairbury, Ill.

J. R. RAYBURN.

Valuable Advice from Dr. R. M. Streeter on the Treatment of Diseased Antrum.—* * * “In the treatment of the antrum, one great thing, in my opinion, is not to do too much. I believe it is more often overdone than otherwise. Little or nothing, except to provide drainage and keep the parts clean, should be done after the surgical operation. For cleansing the cavity, I have used peroxide of hydrogen, or hydronaphthol, or salt and water; for a local stimulant, equal parts of iodine and alcohol; in cases of much ulceration of the mucous membrane, a weak solution of chloride of zinc. And it is a great comfort to the patient if these remedies are used slightly warmed. My method is, after filling the syringe, to place it in moderately hot water one or two minutes.”—*Cosmos*.

Pulp Exposure.—There are some cases where it is difficult to diagnose “Exposure of the Pulp.” But there is one test that has *never* failed me. When I find the dentos sensitive at any point within the cavity of decay, then I am certain that the pulp is *not* exposed. The pulp may have only a thin, soft tissue over it, like a drum-head. Of course, this must be left intact, tho gently cleansed with broad instruments, water, alcohol, camphor spirits and creosote. No pressure should be made on this “drum-head” in placing the filling; for the filling can be condensed in every other direction till the cavity is sufficiently filled to form a *solid* bridge over the pulp.—*Henry S. Chase, in Cosmos*.

Crowning Frail Roots.—A narrow band is fitted around the neck of any root, a cap placed on the top of that, and a pivot fitted in the root and through the cap, the whole being then soldered together. One or two vent-holes are then drilled through the top of the cap, and is set to place with oxyphosphate, the excess coming out through the holes. These holes are then reamed out and filled with gold, and the edge of the band under the gum is burnished to the root. The tooth is then fitted to this cup and set on the projecting pivot with oxyphosphate. The advantage of this plan is that the root being slightly tapered with proper paring instruments, the band can be made to fit absolutely, while the excess of oxyphosphate is gotten rid of through the vent-holes instead of being squeezed out around the edge of the band. The crown used is similar to the Howland crown. Another method employed with these, as well as the old fashioned pivot teeth, is to prepare the root even with the outline of the gum, and set a pivot into it with oxyphosphate. The end of the root is cut very smooth and even and the base of the crown accurately fitted. A mat is made of several thicknesses of soft gold No. 5, and a clean hole cut in the centre of it, of the size of the pivot. It is then put over the pivot as a washer, and the tooth set with oxyphosphate. If in time the cement wastes, the gold remains to preserve the root.—DR. S. G. PERRY, in New York Odontological Society, reported in the *Cosmos*.

Gutta-Percha Solvent.—It is not generally known that *Cajaput Oil* is a good solvent of gutta-percha; it has, however, some disadvantages which may be overcome by using the following formula, which will be found very useful:

Cajaput Oil,
Chloroform 2 2
Gutta-percha, q. s.

This will be found effective for lining cavities and smearing root canals previous to packing with gutta-percha.—*Dent. Record*.

Filing Block.—A door bumper, such as is screwed to the mop-board back of a door to protect the wall, is good. Screwing it to the top or front edge of the bench. Glue over the end the half of a rubber ball. This block can be used on the side or the top of the bench to best suit the convenience of the workman.

The advantages of such a block are that it can be readily screwed to the bench and removed if necessary; the rubber covering helps to hold the plate in position, and deadens the noise when filing.—DR. J. B. VERNON, in *Archives*.

THE CHICAGO COLLEGE OF DENTAL SURGERY.

"Our fellow citizens" of the West are a fast people, arn't they? Just think of it,—this Chicago Dental College of Dental Surgery is only seven years old, and yet for the last session it presents 64 graduates, backed up by a class of 154 matriculates! Well, this is only characteristic of everything else in the great Northwest, with Chicago as its centre and metropolis. The following are the names of the graduates:

Aldrich, William Seward, Minn.	Merrill, Frederick Burdett, New York.
Barber, Heber Bingham, Ill.	Meyer, Lewis Albert, Wis.
Bates, Harvey Herbert, "	Morris, Frederick E., Ill.
Billig, Hal, Clair, Wis.	Morse, Ralph Waldo, Ind.
Brownlee, George Earnest, Ill.	Mueller, William Henry, Wis.
Campbell, William Graham, M. B., C. M., Scotland.	Nelles, Byron Alonzo, Mich.
Capener, Arthur Erwin, Wis.	Oakey, Alfred John, Wis.
Cheeseman, Frank Eugene, Ill.	O'Brien, George Howard, Ill.
Cochran, James Agnew, Ill.	Phillips, William Judson, Ill.
Cowen, William Henry Caldwell, Kan.	Powell, Roscoe Robert, Wis.
Curry, James Albert, Ill.	Raymond, Frank J., Ill.
Edmonds, Nelson Denique, Ind.	Reed, Anderson Franklin, M.D., Colo.,
*Eiles, Frank Stanley, Ill.	Rivenburg, Alex McLeod, Ill.
Ellis, Follen Peabody, Wis.	Robinson, Dward Guibert, Iowa.
Eshelman, Benjamin Franklin, Iowa.	Rogers, Andrew William, Ill.
Farrell, Edward James, Ill.	Runkle, David William, Wis.
Fischer, Vincent, Ill.	*Sackett, Henry Read, Colo.
Fletcher, Frank F., Colo.	Silliman, Herbert, Haynes, Ill.
Flynn, Edward J., "	Smith, Henry Patrick, New York.
Fox, Horace Eugene, Mich.	Smith, John Wesley, Ill.
Fredericks, Enoch Morse, Ill.	Straub, Eli Slifer, Mich.
Gleason, Clarence Albert, Wis.	Swasey, Joseph Atwood, Ill.
Gorsline, William Preston, "	Tabor, Fred Strong, M.D., Ill.
Harrison, Arthur Grant, Ill.	Taylor, David, Jr., Wis.
*Harter, Charles Wesley, Iowa.	Upson, Irwin Francis, New York.
Henry, Charles Cole, Ill.	Vernay, Charles Edward, Ill.
Hoffman, Will Ellsworth, Ill.	Ward, Electus Backus, M.D., Ill.
Johnson, Frank Milton, Ill.	Welch, Thomas Martin, Wis.
Kautsky, Emil John, Wis.	White, Justus Allen, Mich.
Logan, Horace Greeley, Minn.	Willard, Simon, M.D., Ill.
McCawley, William Fletcher, Ill.	Woodward, Frank Vincent, Kan.
McConnell, Frank Tyler, Wis.	Wright, Clarence Huntington, Ill.

* Certificate of Honor for attendance upon one Spring Term.

Lobelia as a Surgical Dressing.—Dr. F. R. Millard cites several cases in which tincture of lobelia was applied on absorbent cotton as a compress, after some minor surgical operations, with directions to keep it constantly moist with the same liquid. In every instance the patient had rapid healing, with no pain or inconvenience.—*Ohio Journal.*

For Our Patients.

TOOTHACHE.

From Practical Dentist.

O, what a wretched pain!
It thumps and comes again;
It racks, and cracks my brain;
Thumping, thumping, thumping,
Jumping, ever jumping—
It seems my head would bust;
It must, I'm sure it must.
Here on my humble cot—
No more a sacred spot—
All night long I've tumbled;
All night long I've grumbled.
In vain I've tried to sleep,

But cometh not a wink;
An angel sure would weep,
If he'd only stop to think,
'Midst his host, so bright and pure,
Of the sighing and the moaning,
Of the endless hours of groaning

That we mortals here endure
When a grinder 'gins to growl,
And his mates like demons howl,
Each one thumping with a will,
And his neighbor harder still—
Thumping, ever thumping;
Jumping, jumping, jumping,
Till one's head is nigh to bursting,
And his soul is really thirsting
For a rest
From this pest.

Let the blust'ring blizzard bliz,
Let the heated heavens sizz,
Let the storm and tempest rise,
And winds go howling through the skies;—
Come, ye horde of creeping things,—
Serpents' fangs and scorpions' stings;
Hail! ye bedbugs, jumbo size;
Hail! brigades of pest'ring flies,
Imps of Satan, ghosts and goblins;
Hail! mosquitoes, big as robins,
Sucking at my blood and singing,
Crucifying me and stinging;

Barking dogs,
Squealing hogs;
Cats at midnight promenading,
'Neath one's window serenading.
Come each sight and sound and pest
If the change shall bring me rest
From this thumping, throbbing, jumping,
From this throbbing, jumping, thumping,
From this avalanche of pain
Madly crushing through my brain.

R. H. R.

AN EMBARRASSED DENTAL PATIENT.

DR. F. A. WILLIAMS, FT. SCOTT, KAN.

While engaged in dental practice some years ago in a community where the Norsemen are largely represented, and when at that time could be found whole communities in which there was not a set of artificial teeth, because these honest neighbors to the arctic circle considered "false teeth" an unwarrantable deception, born of sinful pride, there occurred an office incident the memory of which still provokes a smile.

A young and bright, blue-eyed maiden of that nationality timidly entered my office, inquiring if I was the dentist. I learned from inquiry that she had some teeth needing filling, I directed her to sit in the dental chair. She was by no means ready for that step yet. She partly passed around it at a respectful distance, evidently regarding it as a trap to be avoided. She wanted to know how one was placed in the chair, and then how the position of the chair and patient were changed after you were in it? I endeavored to explain and relieve her nervousness as best I could. She seemed satisfied with matters as far as filling the lower teeth were concerned, but, said she, "the most most of my teeth needing filling are upper ones, and how do you fix the chair to fill them?" I had hard work in assuring her that there was little change in position required in changing from the lower to the upper in filling. Indeed, I think she was very suspicious of the *modus operandi* of filling an upper tooth, and on the alert for emergencies, till I had demonstrated the mode by filling one. After that there was no more trouble till the close of the operation; but I could detect an amused and quizzical countenance to the end of the operation. When it was completed and she had expressed her gratification in words and by gratefully paying the fee, as all good young ladies should, with a countenance wreathed in smiles, she revealed to me the secret of her trepidation on entering my office. Her older brother, she said, who was evidently given a good deal to teasing, had been in the dental chair and had teeth filled, and had assured her that it was a very simple operation to pack down fillings in a lower tooth, but quite a different one in the upper ones, and to fill them the dentist had to reverse the chair so as to stand the patient on his head.—*Practical Dentist.*

To Liquefy Carbolic Acid, fill the space at the neck of the bottle (new) with alcohol and then invert the spirit, which will work upward and dissolve the acid; in microscopical work, or indeed in any other kind, the spirit will do no harm, as it will soon evaporate.

Editorial.

ANESTHESIA.

The blessing of anesthesia as a relief of pain in surgical operations is almost beyond estimate. Some idea may be had by the following considerations:

1st. It removes much of the dread of necessary surgical operations. We instinctively shrink from pain. It is a natural desire to avoid it whenever its endurance is not a necessity. Especially in a surgical operation the dread of pain, with the majority of us, is intense, and we are willing to go far and pay well to have it painless. Even most of those who assume stoical indifference to physical suffering (in others), and call those cowards who cannot heroically endure it, are not always the last to ask for an anesthetic when *they* are to be the subject. If I *must* have a tooth extracted or a finger cut off—and which is the more dreaded or the more painful?—I call that man a benefactor who can do this for me while I am in the sweet realms of dreams.

2d. It is almost impossible for us to give ourselves up voluntarily to severely painful operations without struggle. There will be flinchings, and writhings, and resistance, which most seriously interfere with a skilful operation. We think we will, and make every preparation to exert our will to accomplish it; but when the decisive moment comes every nerve rebels, and neither persuasion nor threats will induce quiet. We were a dentist for more than a quarter of a century, and we never could have it in our heart to blame a patient for not quietly submitting to the dreadful horror of having a tooth extracted.

3d. If the will is strong enough, the nerves may not be. The very strain or tension necessary is not infrequently followed by a prostration that is serious in the extreme.

"It is nonsense," we said to a young man once, "to persist in having gas for the extracting of a single tooth."

"I have had one out," said he, "without taking anything, and I will never suffer such a torture again, if I can avoid it."

But by over-persuasion we induced him to submit, and, as he took the chair, I reached for my forceps that I might surprise him by the brevity of the operation. I had not reached his mouth before I found the lower jaw had involuntarily fallen—he was in a complete state of asphyxia. It was three hours before he was able to leave the office, and many days before he entirely recovered. We then extracted his tooth under the influence of gas, with happiness depicted on every linament of his countenance during the operation. Had he taken gas in the first instance, and the same untoward results had followed as were then present, all the evil would have been charged to the gas.

Not long since a gentleman brought to us his wife, saying :

" Doctor, I would like to have you extract a few teeth for my wife, but please don't give her any anesthetic. I am obliged to leave on the next train, but I presume she will get along all right."

She was a delicate, timid, weak woman, with the nervous, sanguine temperament, and a strong will. There were seven teeth to be extracted. Clinching the arms of the chair with great resolution, she braced herself for the operation. We extracted three, and then told her she should suffer no more. In an imperious, firm, commanding tone she replied: "Take out every one of them." We extracted another, and then informed her if we extracted any more it would be against our judgment. "If it kills me I'll have them out," said she, and out they came.

Complete prostration followed. We sent for a carriage and assisted her to the nearest hotel, where she remained three days before she could be taken home. What an example of the effect of anesthetics that would have been if an anesthetic had been given.

4th. Anesthesia is a great blessing to the operator. He is less interrupted by the patient, is able more fully to concentrate his mind on his work, and acts more completely from unbiased judgment. It needs nice discrimination and special skill to perform many operations. It will not do to have the passions aroused by the unreasonable conduct of the patient, nor the nerves unstrung by excessive sympathy. An operation under anesthesia is much more speedy, certain, and dexterous on this account.

5th. Not only is the patient relieved of pain and the operator from embarrassment, but many serious mishaps are avoided. The struggles of the patient and the uncertain motions caused by interference often cause imperfect operations, and sometimes positive malpractice.

6th. Surgical operations under anesthesia are safer. We verily believe that in operations even under chloroform, there are less deaths in proportion in capital cases than where chloroform is not used. If this can be said of chloroform, how much more boldly we can say it of ether, and still more so of gas. In fact, with gas there is scarcely a fatal case on record. Almost uniformly death, when an anesthetic is used, is charged to the anesthetic, but when it is not used death is "providential." As a surgeon said recently, as his patient died under his knife, "I am glad I did not give this man an anesthetic." "Why glad?" asked the listener. "Because," was the reply, "whatever the cause of death is, if an anesthetic is given, *that* is always made responsible for the death." Even in our dental chairs we have deaths from heart disease, apoplexy, fright, or other causes, where no anesthetic was given.

No doubt, in all minor operations, gas is the safest and best, and that the liquid gas is the purest; but from what we have said we hope it will not be inferred that no qualifications are needed by the operator to administer even gas intelligently.

PROF. H. H. MUDD.

(SEE OUR FRONTISPICE.)

Dr. Mudd was born in Pittsfield, Illinois, April 27th, 1844; received the degree of M.D. from the St. Louis Medical College in 1866, and entered on the practice of medicine the following year, in St. Louis, in the office of Prof. John T. Hadgen, one of the foremost surgeons and eminent teachers in the West. On the death of Dr. Hadgen in 1882, Dr. Mudd succeeded him in the practice of surgery. He was elected to the chair of anatomy in the St. Louis Medical and Missouri Dental Colleges, 1880; was made professor of Surgical Anatomy, in 1886, and of Clinical Surgery in 1886, which position he now holds in the Faculties of the St. Louis Medical and Missouri Dental Colleges. He was made Dean of the Missouri Dental College in 1878.

Dr. Mudd is a member of the American Medical Association and late Chairman of the Surgical Section. As a general surgeon he ranks with the foremost in this country, and as an oral surgeon he has but few equals. To him belongs the credit of being the first to perform the operation for the removal of the maxilla without an external cut. He recognizes dentistry as a branch of medicine, and has ever taken a lively interest in the Missouri school with which he has been connected in some capacity since 1870.

The advocates of a higher grade of dental education, and a thorough ethical training for the dental student, will not find a more able or hearty supporter than Prof. H. H. Mudd.

The Illinois State Dental Society will be held at Quincy, beginning at 10 o'clock, Tuesday, May 14th, and continuing four days.

GARRETT NEWKIRK, Secretary, H. E.

Colorado State Dental Association.—The Colorado State Dental Association will hold its third annual meeting at Denver, Colorado, in the Dental Department of the University, on the first Tuesday of June (4th), 1889, at 10 A. M. H. P. KELLEY, *Rec. Sec.*

The American Journal of Dental Surgery is a new quarterly published at Chicago. It seems to be given without money and without price. It has one other characteristic, it is naked, but probably in due time its parents will cloth it.

SOUTH CAROLINA STATE DENTAL ASSOCIATION.

The Nineteenth Annual Meeting of the South Carolina State Dental Association will be held at Columbia, S. C., Tuesday, May 14, 1889, at 10 A. M. OFFICERS:—I. H. Alexander, President; E. C. Ridgell, First Vice President; J. R. Smith, Second Vice-President; J. C. Oeland, Corresponding Secretary; R. Atmar Smith, Recording Secretary; G. W. Dick, Treasurer. STATE BOARD DENTAL EXAMINERS:—G. F. S. Wright, J. R. Thompson, G. B. White, J. T. Calvert, R. Atmar Smith, Secretary. EXECUTIVE COMMITTEE:—T. B. Legare, J. M. Quattlebaum, T. T. Moore, D. L. Boozer.

MEETINGS.

Iowa State Dental Society meets first Tuesday in May, 1889, at Des Moines.

Illinois State Dental Society meets second Tuesday in May, 1889, at Quincy.

Northern Ohio Dental Association meets at Cleveland on the second Tuesday in May, 1889.

Georgia State Dental Society meets second Tuesday in May, 1889, at Tybee.

The Dental Society of the State of New York meets on the second Wednesday in May, at Albany.

Mississippi State Dental Association meets third Tuesday in May, 1889, at Vicksburg.

Nebraska State Dental Society meets third Tuesday in May, 1889, at Beatrice.

Michigan State Dental Association meets June 4, 1889, at Grand Rapids.

The Scientific American is really what its name indicates. There are few journals devoted to improvements in every department of business trade and scholarship that equals it—perhaps none. There is not a dentist in the United States that would not be a better dentist by its habitual perusal. Send for it for a year to Munn & Co., New York, and see if we do not tell you the truth. It is really inspiring to any artisan that has a particle of ambition.

Mr. G. W. Skleroi, publisher of the *British Journal of Dental Science*, called on us a few days since. We like to see these real live Englishmen on this side of the great waters once in a while. It does them good, and us too. Mr. Skleroi was wide awake for any improvements in his line; and, if he had not been too modest, he could have undoubtedly taught us a lesson or two.

Dental College Education.—Prof. Ingersoll's essay on methods, on another page, is worth more than gold to any dental college that dares adopt his suggestions.

The Dental Society of New York will hold their regular annual meeting at Albany, N. Y., Wednesday and Thursday, May 8th and 9th.

Members of the profession are cordially invited to attend and participate in the discussion of papers. G. L. CURTIS.

Miscellaneous.

THE DEADLY CIGARET.

The cigaret habit appears to be growing among the boys of this city, and there are physicians who tell of its evil effects on the constitution and health of those who indulge in it. It promotes nervous affections, interferes with the digestion, induces insomnia, leads to muscular debility, causes diseases of the mouth and eyes, and blunts the mental powers. It befools the air, leaves its taint on the garments, and apt to create a liking for liquor. It is injurious in every way and advantageous in no respect. Several State Legislatures, including those of New Jersey and Michigan, have bills under consideration for the prohibition of the sale of cigarettes to minors, and a large amount of testimony favorable to such action has been presented to them. In Michigan the testimony of three hundred teachers of boys has been taken on the subject, and many of the facts given are of a kind that might well alarm parents. In this city, especially at night on the East Side, one may often see groups of sallow-faced urchins indulging in the baneful habit.—*New York Sun.*

The Cunning of Swallows.—Birds are often said to possess instinct, as distinguished from intelligence, by which is meant, apparently, that such knowledge as they have is inherited, not acquired. "A bird always builds its nest in one way," it is said; but few statements could be less exact.

Our common cliff swallow, known also as the eaves swallow and the "Republican," formerly built against the face of a cliff, and, as a protection against the weather, the nest, instead of being open at the top, was bottle shaped, the entrance being through a kind of neck at the side. Now that the country has become populous, however, this swallow has taken to nestling under the eaves of barns, where it is shielded from rain by the overhanging roof.

Little by little, therefore, the wise bird has given up its more elaborate method of construction, till now you may see, side by side, nests that are simple mud saucers; nests that are built in the old fashioned bottle method, and nests half way between the two extremes, showing plainly that a process of adaptation is going on.

A Pennsylvania newspaper lately reported a very clever piece of work by a pair of these same eaves swallows. They had built a nest in the old style under the eaves of a barn, and when it was done an English sparrow took possession.

The swallows made frantic efforts to dislodge the intruder, but could not drive her out. Then they went deliberately to work and plastered up the neck of the bottle with mud, burying the sparrow alive, after which they built another nest close by and occupied it as if nothing had happened.

THE STINGS OF INSECTS.

Whether caused by bees, wasps, gnats, ants, or other insects; a strong solution of cocaine applied on cotton held in place with a bandage. The pain ceases at once, and there is no tumefaction.

NEW PROCESS OF HARDENING PLASTER OF PARIS.

The French Academy of Sciences, says *La Semaine des Constructeurs*, has just received a communication from Mr. Julte on a new process of hardening plaster so as to adapt it to the construction of flooring in place of wood, and to other purposes for which it cannot be used in its ordinary state on account of its want of hardness and resistance to crushing.

Mr. Julte recommends the intimate mixture of six parts of plaster of good quality with one part of finely sifted, recently slaked white lime. This mixture is employed like ordinary plaster. After it has become thoroughly dry, the object manufactured from it is saturated with a solution of any sulphate whatever whose base is precipitated in an insoluble form by lime. The sulphates best adapted for the purpose, from every point of view, are those of iron and zinc.

With sulphate of zinc, the object remains white, as might be supposed. With sulphate of iron, the object, at first greenish, finally through desiccation, the characteristic tint of the sesquioxide of iron. The hardest surfaces are obtained with iron, and the resistance to breakage is twenty times greater than that of ordinary plaster. In order to obtain a maximum of hardness and tenacity, it is necessary to temper the limed plaster well in as brief a space of time as possible, and with no more water than is strictly necessary. The object to be hardened should be very dry, so that the solution employed may penetrate it easily. The solution should be near the point of saturation, and the first immersion should not exceed two hours. If immersed too long, the plaster would become friable.

The proportions of the lime and plaster are arbitrary, and may be varied according to the results to be obtained; nevertheless, the proportions of one to six have given the best results.

As it is important that the plaster should not be spread over the surface by passing and repassing the trowel for too long a time, the fastest workman will always be the best one to employ. When sulphate of iron is used, the slabs are of the color of iron rust; but if linseed oil boiled with litharge be passed over the surface, they assume a beautiful mahogany color, and offer a certain superficial elasticity to the tread. If a coat of hard copal varnish be added, the color becomes very beautiful.

On spreading a two or three inch layer of limed plaster in a room, and treating it in the way above described, we obtain a floor which is as smooth as a mirror, and which, in most cases, fulfills the office of an oak floor, but which has the advantage over the latter of costing four times less.

Beer Compared with Other Alcholics.—For some years a decided inclination has been apparent all over the country to give up the use of whisky and other strong alcohols, using as a substitute beer and other compounds. This is evidently founded on the idea that beer is not so harmful, and contains a large amount of nutriment; also that bitters may have some medical quality which will neutralize the alcohol which it conceals, etc. These theories are without confirmation in the observation of physicians. The use of beer is found to produce a species of degeneration of all the organs. Profound and deceptive fatty

deposits, diminished circulation, conditions of congestion, and perversion of functional activities, local inflammations of both liver and kidneys, are constantly present. Intellectually a stupor amounting almost to paralysis arrests the reason, changing all the higher faculties into a mere animalism, sensual, selfish, sluggish, varied only with paroxysms of anger that are senseless and brutal. In appearance, the beer-drinker may be the picture of health; but in reality he is most incapable of resisting disease. A slight injury, a severe cold, or a shock to the body or mind, will commonly provoke acute disease, ending fatally. Compared with inebriates who use different kinds of alcohol, he is more incurable, and more generally diseased. The constant use of beer every day gives the system no recuperation, but steadily lowers the vital forces. It is our observation that beer-drinking in this country produces the very lowest kind of inebriety, closely allied to criminal insanity. The most dangerous class of ruffians in our large cities are beer-drinkers.

Recourse to beer as a substitute for other forms of alcohol merely increases the danger and fatality.—*Scientific American.*

Sleep and Waste of Life —Sleep will do much to cure irritability of temper, peevishness and uneasiness. It will build up and make strong a weary body. It will do much to cure dyspepsia, particularly that known as nervous dyspepsia. It will relieve the languor and prostration felt by consumptives; will cure hypochondria, the headache, and neuralgia. No man should do more work of muscle or of brain in a day, than he can perfectly recover from the fatigue of in a good night's rest. Up to that point, exercise is good; beyond are waste of life, exhaustion and decay. When hunger calls for food, and fatigue demands rest, we are in the natural order, and keep the balance of life. When we take stimulants to spur our jaded nerves, or excite an appetite, we are wasting. There is wrong and mischief in all waste of life. A man should live so as to keep himself at his best, and with a true economy. To eat more food than is needful is worse policy than tossing money into the sea. It is a waste of labor and a waste of life.—*Healthy Life.*

Why the Cat is not Harmed by the Fall.—It is quite wonderful to see a cat jump from a height. It never seems to hurt itself, or to get giddy with the fall. It always lands on its feet, and these are so beautifully padded that they seldom or never get broken. Why does not the animal get a headache after its jump? Why does it not receive a concussion of the brain, as a man or a dog would if he performed a similar acrobatic feat? To answer this, we must examine a cat's skull, when we shall see that it has a regular partition wall projecting from its sides, a good way inward, toward the centre, so as to prevent the brain from suffering from concussion. This is indeed a beautiful contrivance, and shows an admirable internal structure, made in wonderful conformity with external form and nocturnal habits.

Man, being the servant and the interpreter of nature, can do and understand so much, and so much only, as he has observed, in fact or in thought, of the course of nature. Beyond this he neither knows anything nor can do anything.—*Bacon's Novum Organum, Aphorism.*